

# LUPTON

## STEEL PRODUCTS

PROJECTED WINDOWS

PIVOTED WINDOWS

CONTINUOUS WINDOWS

WINDOW OPERATORS

STEEL TUBE DOORS

STEEL SKYLIGHT

# 1936

LUDMAN CORPORATION  
35 N. W. 7TH STREET  
MIAMI, FLORIDA  
PHONE 25605



# MICHAEL · FLYNN

## MANUFACTURING · CO.

*Ludman Corp.*  
*25605*  
*Circason*





# L U P T O N I N D U S T R I A L W I N D O W S



## MICHAEL FLYNN MANUFACTURING CO.

*Successors to* David Lupton's Sons Co.  
Allegheny Ave. at Tulip St.  
Philadelphia, Pa.

Windows 926

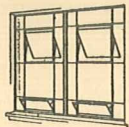
April 1936

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Printed in U. S. A.



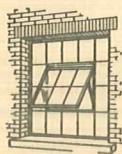
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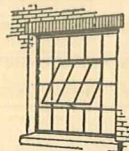
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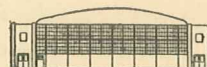
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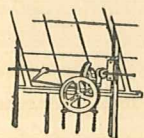
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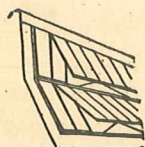
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OTHER LUPTON PRODUCTS  
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**M**ICHAEL FLYNN MANUFACTURING COMPANY, successors to David Lupton's Sons Company, in continuing this long established window line, are guided by the conviction that a quality product will find ready acceptance by those whom it is designed to benefit.

Lupton Industrial Window Products include windows, architecturally and structurally correct, in a wide range of types and sizes, to meet every industrial building requirement. Prompt deliveries are assured by our large stock of assembled windows in warehouse sizes and our excellent facilities for quick assembly of other types.

In the following pages is presented information to assist you in the preparation of details and specifications. Details are typical, showing construction and general principles underlying satisfactory installation. To insure accurate estimates, all products should be accurately listed and located either in schedules on plans or in specifications. If more than one type of product or type of hardware is desired, each type should be separately listed and located or otherwise clearly designated.

## Erecting

Where preferred, we will erect any of our products, but stock items such as Pivoted, Basement and Residence Casement Windows are usually more economically erected by the general building contractor. All other Lupton Products, however, because of their special application should be erected by our own forces to assure satisfactory installation and service. There is an erection specification prepared for each product which should be exactly followed and which will secure satisfactory use of product at reasonable cost.

## Glazing

Glazing should be done by experienced steel window glaziers. We suggest that glazing of Pivoted, Basement, Commercial and Architectural Projected and Residence Casement Windows be handled by others. However, we will arrange for glazing of any of our products when this is preferred. When glazing, the glass should be bedded in putty to form a water-tight seal and to prevent glass touching metal.

## Putty

Always specify steel window putty for glazing steel windows. Ordinary putty intended for wood windows will not be satisfactory as it dries hard and cracks away from steel. Because various climates require variations in the ingredients of satisfactory putty, we recommend that putty be obtained from local sources. When this is impossible, putty may be secured from the Michael Flynn Mfg. Co. or its sales representatives.

## Calking

See calking specification for each product. The calking cement furnished by us is elastic, dark gray in color and will not stain masonry. When we apply calking, application is for weathertightness only and is understood not to be a finished pointing job. Erector spreads cement on edge of window and strikes off excess after window is set in place.

## Painting

All Lupton Products are given a shop coat of paint before shipment. After glazing, no painting should be done until putty has set (about three weeks). It is advisable to hold the painting contractor responsible for cleaning plaster or other foreign matter from the weathering surfaces of the windows in order that it may not be painted over and cause imperfect contact.



# ARCHITECTURAL PROJECTED WINDOWS

Some buildings, or parts of buildings, because of limits in cost or because of other restrictions, will not permit the use of casement windows. In such cases, Lupton Architectural Projected Windows, made of medium weight sections, will often fill the requirements of good ventilation and lighting with entire satisfaction.

Made in standard sizes for outside or inside glazing. Window dimensions, glass sizes, and wall details are the same for both inside and outside glazed windows.

## Specifications

### Work Included

1. Furnish and install where shown on drawings, Lupton Steel Architectural Projected Windows, manufactured by Michael Flynn Mfg. Co., Philadelphia, Pa.

### Materials

2. Frame members shall be heavy, specially designed, solid steel, unequal leg channel sections.

3. Ventilator members shall be specially designed, solid steel angle sections.

4. Muntins shall be specially designed, solid steel cruciform section  $1\frac{3}{8}$  in. deep.

5. Vertical mullions shall be formed steel plate.

Note:—Structural steel members forming Imposts are not furnished by the window manufacturer.

### Construction

6. Windows shall be designed for outside glazing (or specify: windows shall be designed for inside glazing with glazing angles).

7. Both Frames and Ventilators shall be assembled by tenoned, riveted joints and shall be interlocked at their intersections.

8. Muntin Bars shall be attached to frame members by tenoned riveted joints and shall be interlocked at their intersections.

9. Vertical Mullions and bolts for attachment shall be provided where two or more windows are placed side by side in an opening.

10. Each ventilator shall be accurately pivoted on two ventilator arms of solid steel. The connections between the ventilator arms and the window frames shall be made by steel arm blocks.

11. Each ventilator shall be equipped with two brass friction shoes, sliding vertically in the ventilator jambs to guide the ventilator and prevent rattling. Each shoe shall be equipped with a rustproofed, flat steel spring attached to the ventilator to assure constant pressure at the jambs.

12. An angle clip  $1\frac{15}{16}$  in. x 1 in., x 2 in. long shall be riveted to the ventilator frame to provide for attaching locking handle.

13. All windows shall be drilled as indicated on window manufacturer's details for attaching shade brackets.

(See note at end of specification.)

### Hardware

14. All locking handles shall be solid bronze, highly polished. (Note:—Other finishes may be had if specified.)

15. Hardware (described below) shall be shipped unattached carefully packed to prevent damage until applied.

16. Provide cam action locking handles for open in and open out ventilators within reach from floor.

Provide ring type cam action locking handles and pull down rings for open out ventilators beyond reach from floor.

### Screens

See note at end of specification. If screens are desired, specify.

17. All windows shall be fitted with screens, attached to the frames of the ventilators so as to prevent entrance of insects. Screen frames shall be  $\frac{1}{8}$  in. x  $1\frac{1}{8}$  in. formed galvanized steel tubing, reinforced and welded at corners, and shall be rewirable. Wire shall be 16 mesh bronze wire cloth. Frames shall be painted same color as windows.

### Erection (See page 3)

18. All Architectural Projected Windows shall be set plumb and true, properly aligned and securely anchored before glazing. Mullions shall be bolted securely to Frames.

Note:—Include in the masonry specification that all masonry openings shall be accurately constructed in accordance with the installation details for Architectural Projected Windows. All grouting, pointing, etc., should be done by the mason contractor after the windows are set.

### Calking

(See page 3 and note at end of specification.)

### Painting (See page 3)

19. All Architectural Projected Windows shall receive one shop coat of window manufacturer's standard, gray paint, oven dried.

### Glass and Glazing

Note:—(See page 3.) Specify glass and glazing under proper heading elsewhere in specifications.

(a) Do not specify single thickness glass.

(b) Specify a high-grade steel window putty (ordinary wood sash putty must not be used.)

(c) Specify that Lupton Architectural Projected Windows shall be glazed from the outside, the glass shall be set in a bed of putty, and held by Lupton standard wire glazing clips.

Or (d) Specify that Lupton Architectural Projected Windows shall be glazed from the inside, the glass shall be set in a bed of putty and held by continuous glazing stops.

### Note

When clearly indicated in original specifications and drawings and mentioned in contract for windows, the following items will be furnished.

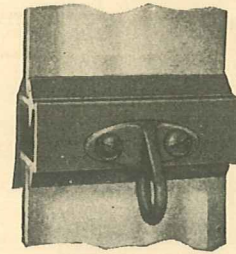
(a) Screens (b) Shade brackets (c) Non-staining elastic calking cement for head, jambs and sill. (d) Application of calking cement if windows are erected by the window manufacturer) at time of rection.



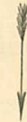
# ARCHITECTURAL • PROJECTED • WINDOWS • INSIDE • OR • OUTSIDE • GLAZED • STANDARD • TYPES • AND • SIZES

WINDOW DIMENSIONS → 3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	V. DIMEN
GLASS SIZE → 34 1/4"	7 1/4", 24 7/8"	10 1/4", 24 1/4"	12 3/4", 24 1/4"	15 1/4", 34 1/4", 11 1/8"	SEE DETAILS FOR MEASURE • POINTS
4'-6"	13 3/4", 24", 13 3/4"	11.03 sq. ft.	12.69 sq. ft.	14.70 sq. ft.	15.82 sq. ft.
	PB 3046	PB 3646	PB 4046	PB 4646	PB 5046
5'-0"	16 3/4", 24", 16 3/4"	11.70	13.77	16.10	18.17
	PBT 3050	PBT 3650	PBT 4050	PBT 4650	PBT 5050
5'-6"	19 3/4", 24", 19 3/4"	13.15	15.26	18.53	21.11
	PBT 3056	PBT 3656	PBT 4056	PBT 4656	PBT 5056
6'-0"	22 3/4", 27", 19 3/4"	14.49	16.80	19.66	22.15
	PBT 3060	PBT 3660	PBT 4060	PBT 4660	PBT 5060
6'-6"	16 3/8", 21", 21", 16 3/4"	15.80	18.27	21.34	24.03
	PBT 3066	PBT 3666	PBT 4066	PBT 4666	PBT 5066
7'-0"	16 3/8", 24", 24", 16 3/4"	17.17	19.82	23.12	26.08
	PBT 3070	PBT 3670	PBT 4070	PBT 4670	PBT 5070
7'-6"	16 3/8", 27", 27", 16 3/4"	18.54	21.37	24.92	28.14
	PBT 3076	PBT 3676	PBT 4076	PBT 4676	PBT 5076
8'-0"	19 3/8", 27", 27", 19 3/4"	19.91	22.94	26.74	30.61
	PBT 3080	PBT 3680	PBT 4080	PBT 4680	PBT 5080
8'-6"	22 3/4", 27", 27", 22 3/8"	21.28	24.47	28.56	32.20
	PBT 3086	PBT 3686	PBT 4086	PBT 4686	PBT 5086
9'-0"	16 3/8", 24", 23 3/8", 24", 16 3/4"	21.06	25.32	29.44	33.34
	PBT 3090	PBT 3690	PBT 4090	PBT 4690	PBT 5090
H. DIMEN.	2'-0 1/8"	2'-0 1/8"	2'-0 1/8"	2'-0 1/8"	2'-0 1/8"
SEE DETAILS FOR MEASURE • POINTS					

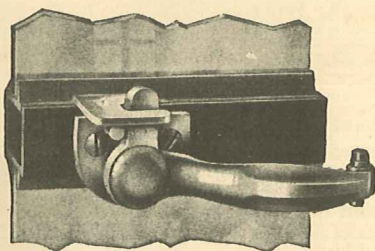
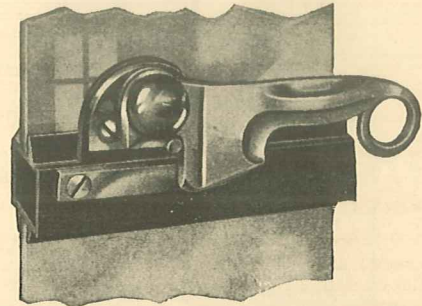
\* Glass Sizes are for Fixed Lights. Glass in Vents is 2" less in Width & Height.



PULL-DOWN-RING • N° 358  
Mounted on top rail of open-out ventilator for pole operation  
Used in conjunction with Ring Handle shown below.



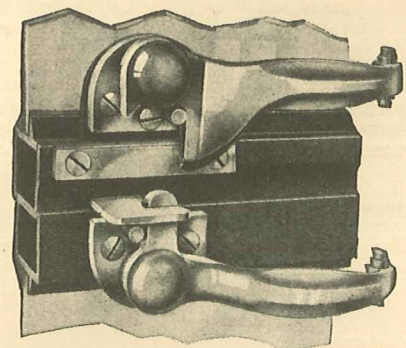
LOCKING-HANDLE • N° 328  
For pole operation of open-out-at bottom ventilators beyond reach from floor



LOCKING-HANDLE • N° 266  
For ventilators opening in-at-top.

LOCKING-HANDLE • N° 268  
For all open-out-at-bottom ventilators within reach from floor.  
Shown mounted on meeting rail between open-out ventilator and open-in ventilator  
The lower handle is N° 266.

MATERIAL • AND • FINISH  
Hardware is solid bronze with a highly polished finish unless another finish is specified.

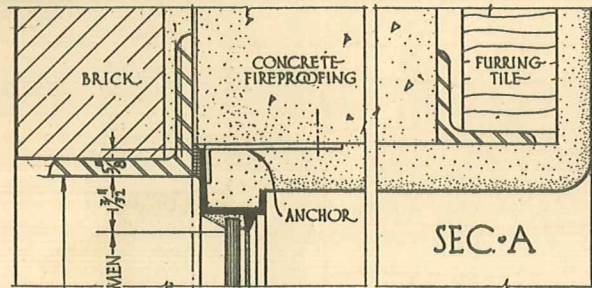


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LUPTON  
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HARDWARE and STD. • SIZES  
LUPTON • ARCHITECTURAL • PROJECTED • WINDOWS

PLATE • N°  
401  
APRIL • 1936

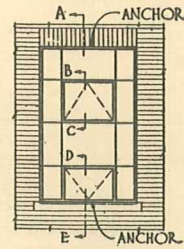




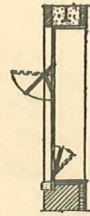
SEC. A

• NOTE •

Ventilators open to positions indicated by dotted lines to permit cleaning from inside the building.

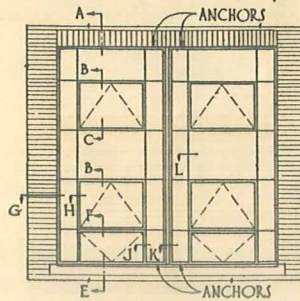


• ELEVATION •  
VENTILATORS CLOSED



• SECTION •  
VENTILATORS OPEN

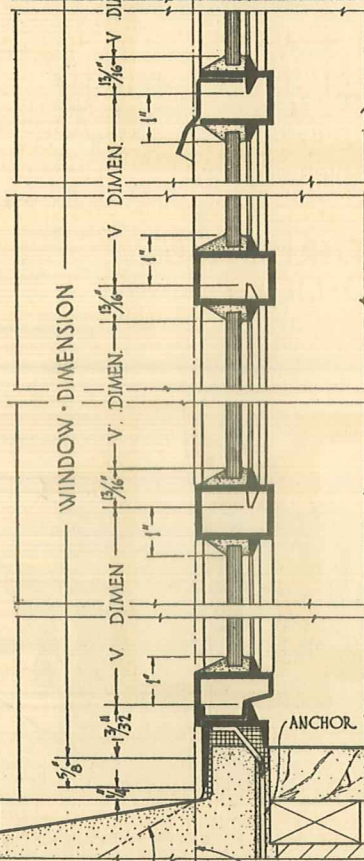
SCALE 1/8" = 1'-0"



• ELEVATION •  
VENTILATORS CLOSED



• SECTION •  
VENTILATORS OPEN



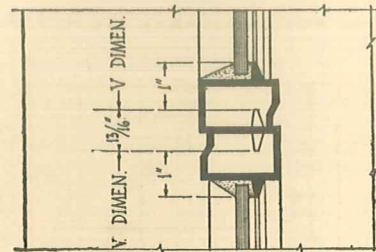
SEC. B

SEC. C

SEC. D

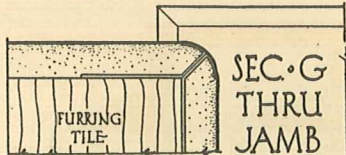
SEC. E

A SILL SLOPED THUS MAY BE USED  
1 1/4" BACK LINE OF REVEAL



SEC. F THRU  
MEETING RAIL

SCALE FOR DETAILS 3/8" = 1'-0"



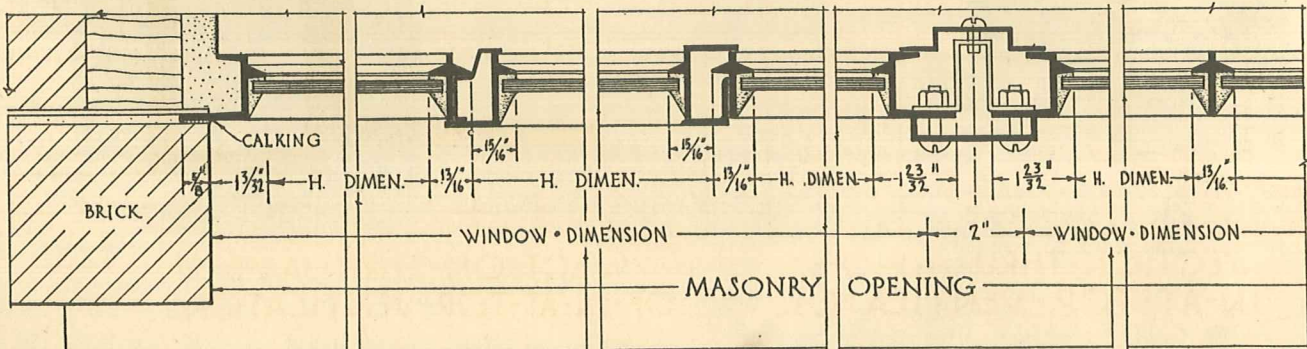
SEC. G  
THRU  
JAMB

SEC. H

SEC. J

SEC. K THRU  
MULLION

SEC. L THRU  
MUNTIN

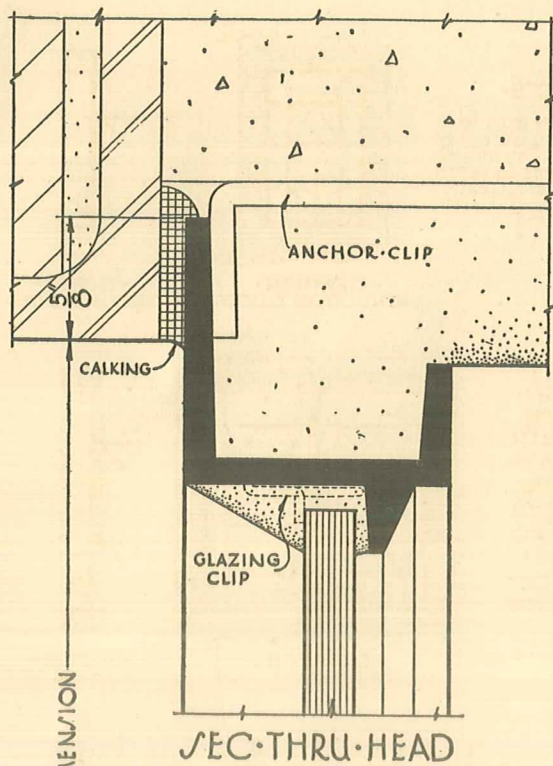


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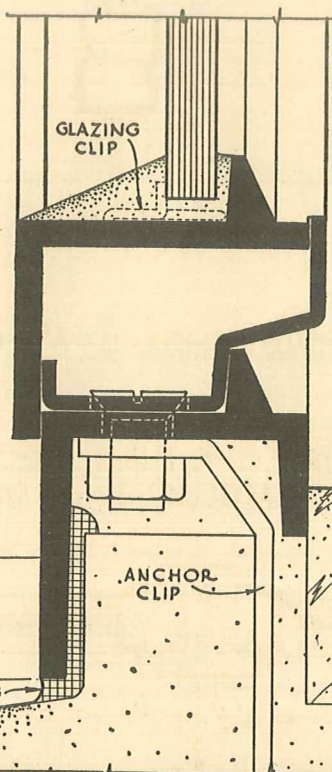
DETAILS-OUTSIDE GLAZED  
LUPTON ARCHITECTURAL PROJECTED WINDOWS

PLATE N°  
402  
APRIL 1936

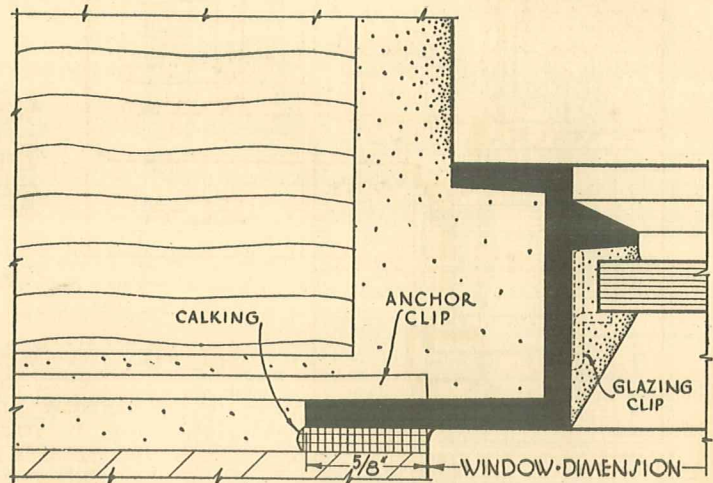




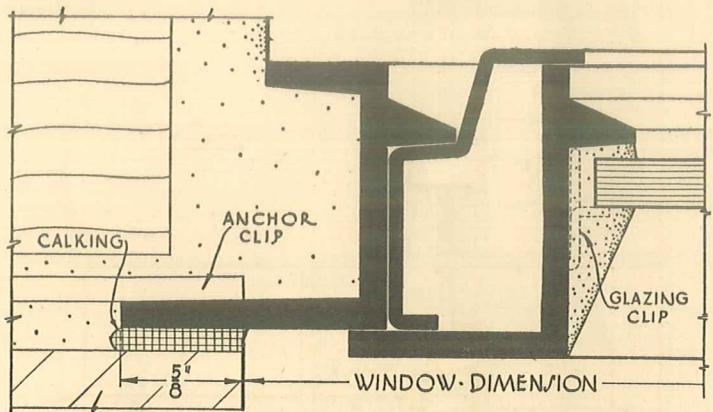
SEC. THRU HEAD



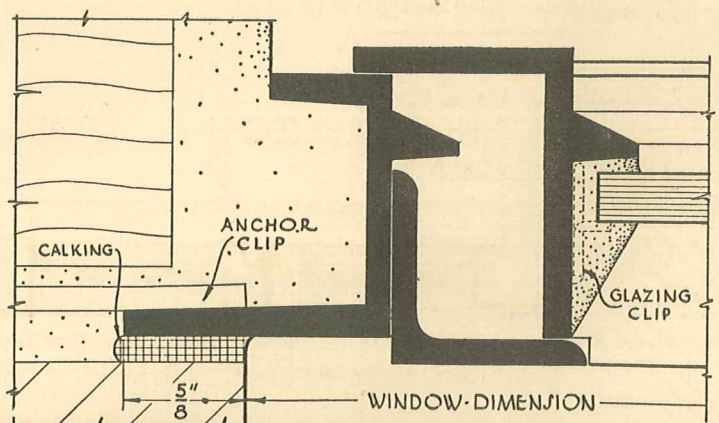
SECTION THRU SILL OF IN-AT-TOP VENTILATOR



SECTION THRU JAMB OF FIXED LIGHT



SECTION THRU JAMB OF BOTTOM-PROJECTED-OUT VENTILATOR



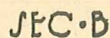
SECTION THRU JAMB OF IN-AT-TOP VENTILATOR

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WINDOW PRODUCTS

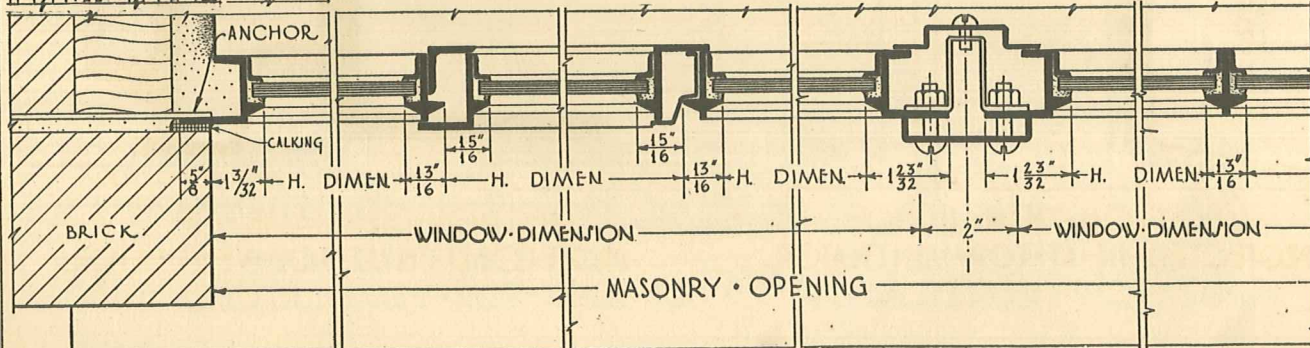
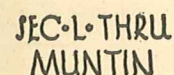
FULL SIZE SECTIONS OUTSIDE GLAZED  
LUPTON ARCHITECTURAL PROJECTED WINDOWS

PLATE NO  
403  
APRIL 1936





SEC. G  
THRU  
JAMB



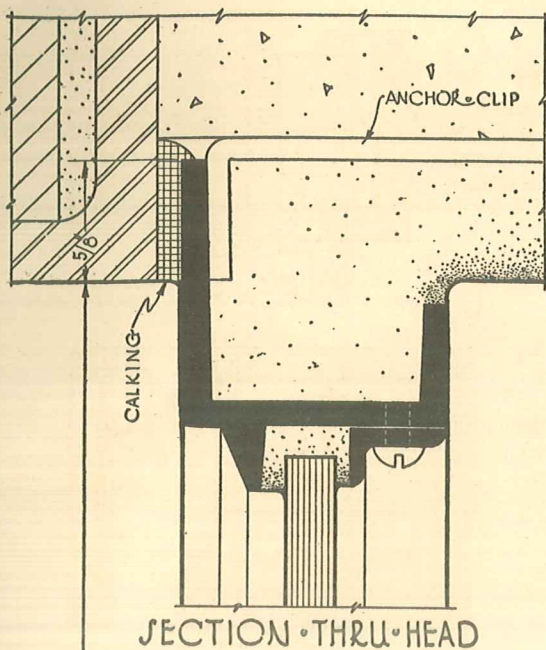
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MANUFACTURING CO.  
LUPTON  
WINDOW PRODUCTS

DETAILS-INSIDE-GLAZED  
LUPTON-ARCHITECTURAL-PROJECTED-WINDOWS

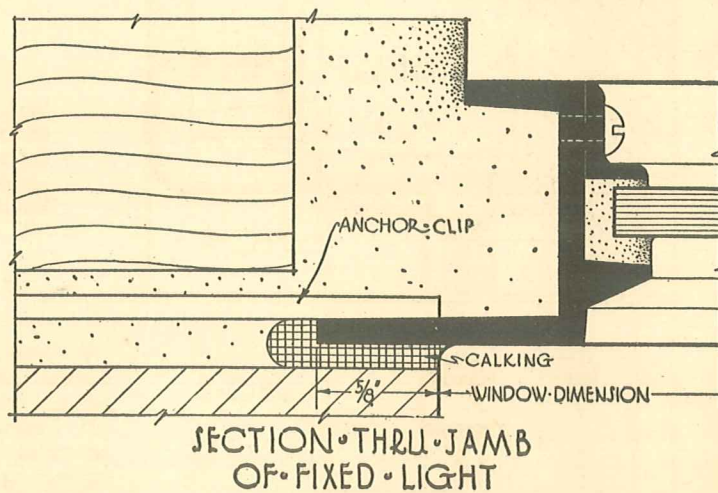
PLATE • N<sup>o</sup>  
404  
APRIL • 1936

• 8 •

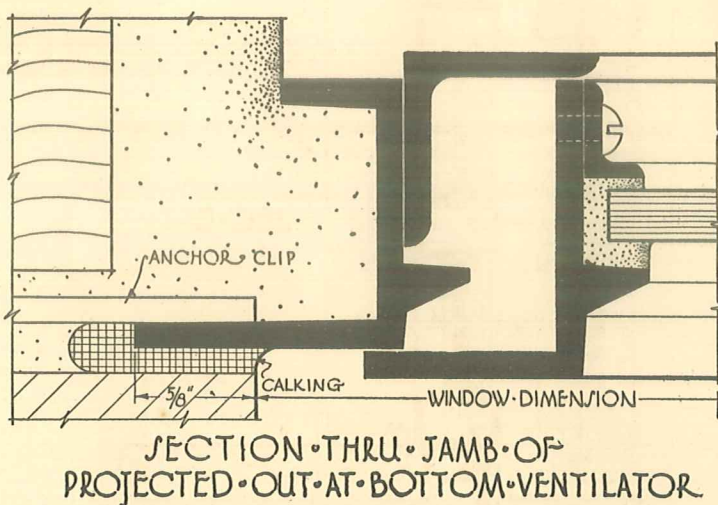




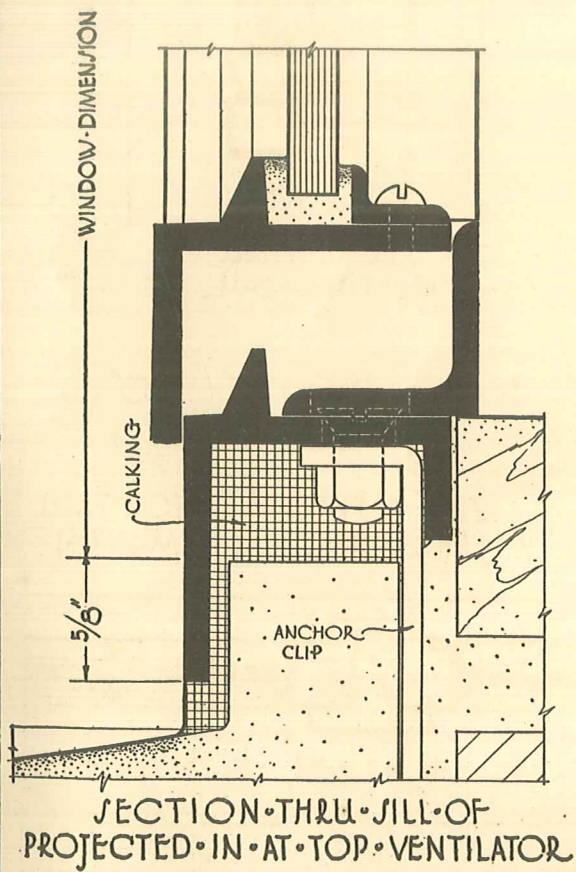
SECTION • THRU • HEAD



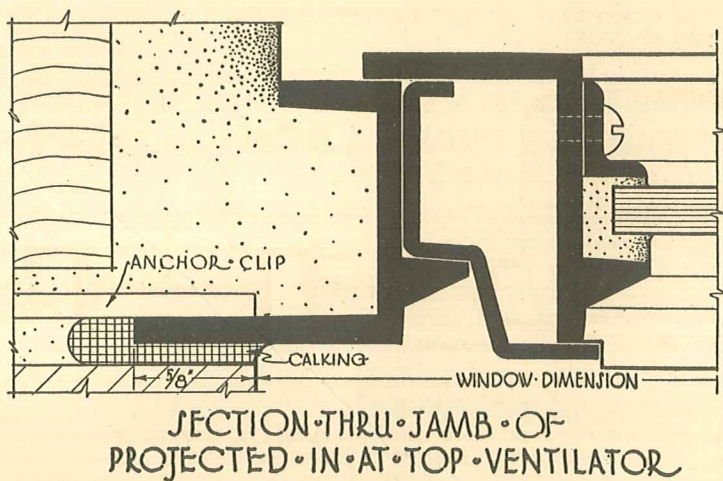
SECTION • THRU • JAMB  
OF • FIXED • LIGHT



SECTION • THRU • JAMB • OF  
PROJECTED • OUT • AT • BOTTOM • VENTILATOR



SECTION • THRU • SILL • OF  
PROJECTED • IN • AT • TOP • VENTILATOR



SECTION • THRU • JAMB • OF  
PROJECTED • IN • AT • TOP • VENTILATOR

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LUPTON  
WINDOW • PRODUCTS

FULL • SIZE • SECTIONS INSIDE •  
GLAZED  
LUPTON • ARCHITECTURAL • PROJECTED • WINDOWS

PLATE • N°  
405  
APRIL • 1936



# COMMERCIAL PROJECTED AND PIVOTED WINDOWS

These two types of windows are almost identical in construction, the difference is in the operation (or hanging) of the movable portion or ventilator.

Both types have a wide range of application though mostly used for industrial buildings and buildings of like character. Both types can be screened.

## Specifications

### Work Included

1. Furnish where shown on drawings Lupton Steel Commercial Projected Windows (or Lupton Steel Pivoted Windows) manufactured by Michael Flynn Mfg. Co., Philadelphia, Pa.

### Materials

2. Ventilator and frame members, muntins and mullions shall be of hot rolled steel.

3. Frame member shall be special angle section, muntins shall be cruciform section  $1\frac{3}{8}$  in. deep, and mullions shall be T bars.

Note:—Structural steel members forming imposts are not furnished by the window manufacturer.

### Construction

4. All Commercial Projected (or Pivoted) Windows shall be designed for inside glazing.

5. Both frames and ventilators shall be assembled by tenoned, riveted joints at corners. (Commercial Projected Ventilators shall have corners welded in addition to riveting.) Continuous two point, flat weathering contact shall be provided between frame and ventilator.

6. All muntins shall be continuous thru, and interlocked at, their intersections. They shall be attached to frame or ventilator members by tenoning and riveting.

7. Vertical mullions shall be provided where two or more units are to be placed side by side in one opening.

8. Where windows are anchored to steel structure, furnish clips of types to suit conditions.

9. Furnish anchor clips at sill, at least one clip for each two lights in the width of a unit.

10. Where hardware is to be attached to bottom rail of ventilator, a clip for this purpose shall be riveted to ventilator.

11. COMMERCIAL PROJECTED WINDOWS shall have ventilators accurately pivoted at sides on two steel arms attached to window frames by steel arm blocks. Each ventilator shall be equipped with two rustproofed flat, steel springs and two brass friction shoes. Friction shoes shall slide vertically in the channels formed by the side weathering of the ventilators with sufficient friction to hold the ventilators in any open position up to the limit of their movement and to prevent rattling.

12. PIVOTED WINDOWS shall have ventilators horizontally pivoted. Pivots shall be located two inches above center line of ventilator. Pivot plates shall be integral with the side weathering. Pivot pins shall be  $\frac{5}{16}$ -in. iron rivets fastened with cotter pins.

### Hardware

13. All hardware shall be shipped unattached, carefully packed.

14. COMMERCIAL PROJECTED WINDOWS shall have the following malleable iron hardware:

For open out ventilators—Ring handle and pull down ring.

For open in ventilators within reach—Locking handle.

For open in ventilators beyond reach—Spring catch.

15. PIVOTED WINDOWS shall have the following hardware:

Provide stay bar and clip for ventilators within reach from floor, provide spring catch, chain, chain roller guide and clip for vents beyond reach from floor.

### Erection

16. All Commercial Projected (or Pivoted) Windows shall be erected by the window contractor (or state by whom) in prepared openings.

Note:—Setting in prepared openings is the recommended practice. Include in the masonry specifications that all masonry openings shall be accurately constructed in accordance with the installation details for Lupton Commercial Projected (or Pivoted) Windows. All grouting, pointing, etc., should be done by the mason contractor after the windows are set. Note:—See page 3.

17. Windows shall be set plumb and true, properly aligned and securely anchored and all ventilators properly adjusted before glazing.

18. All hardware shall be applied under window manufacturer's directions.

### Painting

19. All windows shall receive one shop coat of window manufacturer's standard, gray paint, oven-dried.

### Glass and Glazing

20. Furnish standard wire glazing clips, four to each light.

Note:—(See page 3) Specify glass and glazing under proper heading elsewhere in specifications.

(a) Do not specify single thickness glass.

(b) Specify high-grade steel window putty (ordinary wood sash putty must not be used).

(c) Specify that Lupton Commercial Projected (or Pivoted) Windows shall be glazed from the inside; the glass set in a bed of putty and held by Lupton standard wire glazing clips.

Or (d) specify that Lupton Commercial Projected (or Pivoted) Windows shall be glazed from the inside; the glass set in a bed of putty and held by steel glazing angles fastened with rustproofed round head machine screws. \*



# Specifications (continued)

## Screens\*

21. All Commercial Projected (or Pivoted) Windows shall be equipped with flat screens. Screens shall fit closely so as to prevent entrance of insects.

22. Screen frames shall be rectangular steel tubing  $1\frac{1}{8}$  x  $\frac{7}{16}$  in., galvanized, reinforced at corners and painted one coat of gray paint to match the windows. They shall be rewirable. Wire shall be 16 mesh bronze wire cloth.

23. "Projected in" ventilators shall have screens on outside; "projected out" ventilators shall have screens on the inside.

24. Each pivoted ventilator shall have two flat screens, one on the outside of the upper half of the vent and one on the inside of the lower half.

## \*Note

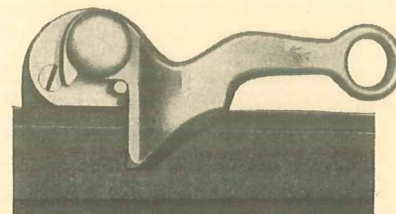
The following items are furnished when clearly indicated in original specifications or on drawings and mentioned in contract for windows.

1. Pivoted Windows with pivots located elsewhere than 2 in. above center of ventilator.
2. Screens.
3. Continuous glazing angles (These are required on underwriters' labeled windows).
4. Underwriters' labels (page 17).
5. Jamb plates (page 16).
6. Bronze hardware.
7. Mechanical operators (page 18).
8. Window cleaners' anchors.
9. Mullion covers (page 13).

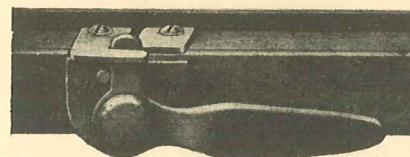
## Hardware

Standard hardware is steel or malleable iron, painted. Bronze hardware may be had if desired but must be clearly specified. See note at end of specifications.

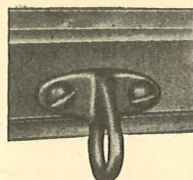
At right. Locking Handle No. 141. Malleable iron, painted. Used on Projected out at bottom Ventilators.



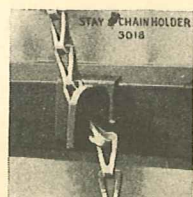
At right. Locking Handle No. 308. Used within reach from floor on Projected in at top Ventilators. Spring Catch No. 509 is used beyond reach.



At left. Standard units have upper ventilator equipped with Spring Catch 3130, Chain roller guide 3102 and 10 ft. of chain. Lower ventilator is equipped with stay bar 3115. Where sill height is given on order, spring catch, etc., is furnished on all vents having bottom edges over 6 ft. above floor.

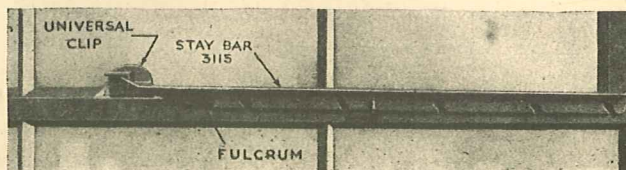


At left. Pull Down Ring No. 4881. Malleable iron, painted. Used on Projected out at bottom Ventilators.

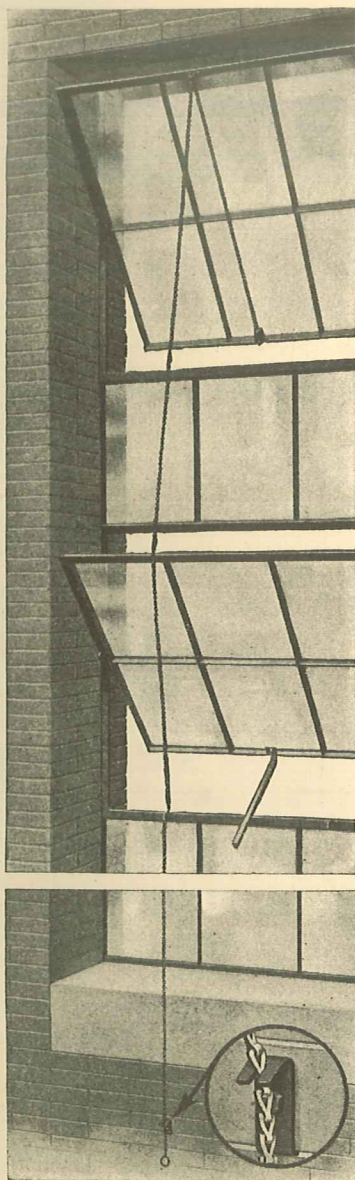


At left. Steel Clip No. 3018 attached to window holds either stay bar or chain.

Below. Steel Angle Stay Bar No. 3115. This bar in addition to holding the ventilator open will draw the ventilator tightly shut and lock it when inserted in clip No. 3018 provided for the purpose.





























At left. Steel clip No. 2365. Used to fasten chain when sill is beyond reach from floor.





# COMMERCIAL • PROJECTED

WINDOW • DIMENSION • WIDTH

No. of Lights	2		3		4		5	
	12"x18" Glass	14"x20" Glass	2'-1 5/8" 3'-2"	2'-5 5/8" 3'-8"	4'-2 3/8" 4'-10 3/8"	5'-2 3/4" 6'-0 3/4"		
2	3'-1 5/8"	3'-5 5/8"	 22140 4.98 6.61	 32160 7.54 10.03	 42140 10.53 13.90	 52160 13.18 17.40	Note Exposed glass area in square feet 20.20—for 12"x18" glass 26.60—for 14"x20" glass	
3	4'-8"	5'-2"	 23141 7.70 10.20	 33161 11.76 15.55	 43141 16.18 21.30	 53161		
4	6'-2 3/8"	6'-10 3/8"	 34161 16.03 21.10	 3423602 15.33 20.30	 44141 21.80 28.70	 4422402 21.30 28.00	 54161 27.28 35.85	 5423602 26.60 35.00
5	7'-8 3/4"	8'-6 3/4"	 35161 20.25 26.60	 35162 19.55 25.80	 3523602 27.45 36.00	 4522402 26.93 35.40	 55161 34.35 45.10	 55162 33.60 44.25
6	9'-3 1/8"	10'-3 1/8"	 36161 24.50 32.20	 3623603 23.80 31.40	 362614 23.55 31.10	 46141 33.07 43.40	 4622403 32.60 42.80	 56161 41.40 54.30

**NOTES**  
• Indicates Dealer Stock Windows.  
Window Dimension of a Unit is same as Masonry Opening needed for that Unit.  
Glass in fixed lights is 12"x18" or 14"x20"  
Border lights in ventilators are reduced to allow 1" for weathering. See diagrams below.

12	12	12	12	12
18	18	18	18	18
12	12	12	12	12
18	18	18	18	18




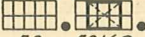










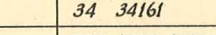
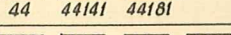
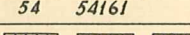




14	14	14	14	14
20	20	20	20	20
14	14	14	14	14
20	20	20	20	20

SWING of VENTILATOR  
Indicated by dash lines.



# PIVOTED • WINDOWS

WINDOW • DIMENSION • WIDTH

No. of Lights	2		3		4		5		6	
	12x18" Glass	14x20" Glass	2'-1 <sup>5</sup> / <sub>8</sub> " 2'-5 <sup>5</sup> / <sub>8</sub> "	3'-2" 3'-8"	4'-2 <sup>3</sup> / <sub>8</sub> " 4'-10 <sup>3</sup> / <sub>8</sub> "	5'-2 <sup>3</sup> / <sub>4</sub> " 6'-0 <sup>3</sup> / <sub>4</sub> "	6'-3 <sup>1</sup> / <sub>8</sub> " 7'-3 <sup>1</sup> / <sub>8</sub> "			
2	3'-1 <sup>5</sup> / <sub>8</sub> "	3'-5 <sup>5</sup> / <sub>8</sub> "	 22140	 32 32160	 42 42140 42180	 52 52160	 62180			
3	4'-8"	5'-2"	 23141	 33 33161	 43 43141 43181	 53 53161	 63181			
4	6'-2 <sup>3</sup> / <sub>8</sub> "	6'-10 <sup>3</sup> / <sub>8</sub> "	 34 34161	 44 44141 44181	 54 54161	 64181				
5	7'-8 <sup>3</sup> / <sub>4</sub> "	8'-6 <sup>3</sup> / <sub>4</sub> "	 35 35161 35162	 45 45141 45181 45182	 55 55161 55162	 65181				
6	9'-3 <sup>1</sup> / <sub>8</sub> "	10'-3 <sup>1</sup> / <sub>8</sub> "	 36161	 46181	 56161					

**NOTES**  
• Indicates Dealer Stock Windows.  
Window Dimension of a Unit is same as Masonry Opening required for that Unit.  
Glass in fixed lights is 12"x18" or 14"x20"  
Glass in ventilators is reduced to allow 1" for weathering. See diagrams.

12	12	12	12	12
18	18	18	18	18
12	12	12	12	12
18	18	18	18	18

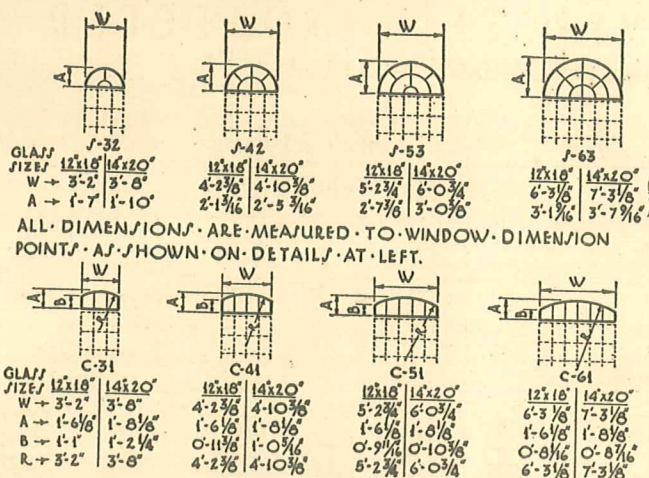
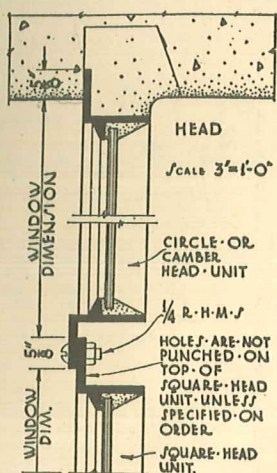
14	14	14	14	14
20	20	20	20	20
14	14	14	14	14
20	20	20	20	20

MICHAEL FLYNN  
MANUFACTURING CO  
LUPTON  
WINDOW PRODUCTS

STANDARD • TYPES and SIZES  
LUPTON • PIVOTED & COMM'L • PROJECTED • WINDOWS

PLATE • N°  
603  
APRIL • 1936







WINDOW-DIMENSION —

INTERMEDIATE JOINTS ( $\frac{1}{2} \times \frac{3}{8}$ ) LOCATED OPPOSITE C. OF EACH LIGHT

2" —

1  $\frac{3}{8}$ " —

5" —

3" —

5  $\frac{1}{8}$ " — WINDOW-DIMENSION —

SPECIAL CUT-AT-SILL USED WHERE MULLION STEM TURNS IN.

1. AT IMPOSTS - TYPES 2, 3, 4, 5 & 6 (SEE TABLE AT RIGHT)

2. AT CUT STONE SILLS OR WOOD SILLS WHEN NOTCHING OF SILLS IS UNDESIRABLE (WHEN SPECIFIED)

STANDARD END-CUT FOR MULLIONS

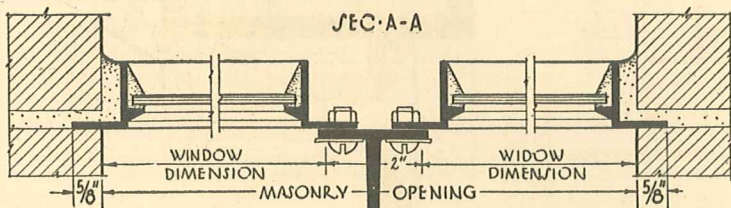
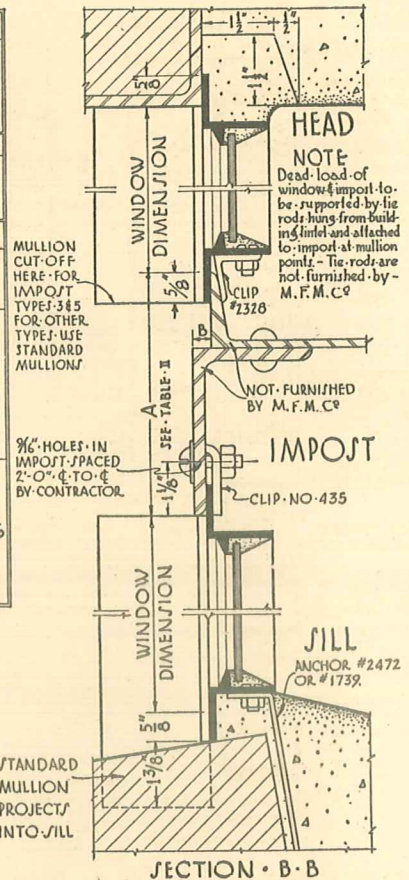
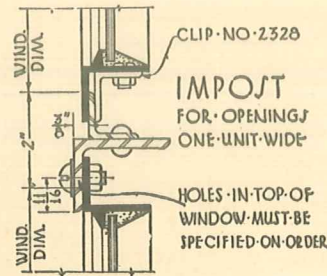
BEYOND BOTTOM OF WINDOW, AND IF IMBEDDED IN THE SILL, THIS TYPE IS ALWAYS FURNISHED UNLESS OTHERWISE SPECIFIED.

SPECIAL CUT-AT-SILL USED WHERE MULLION STEM TURNS OUT.

1. AT IMPOSTS - TYPES 3 & 5 (SEE TABLE AT RIGHT)

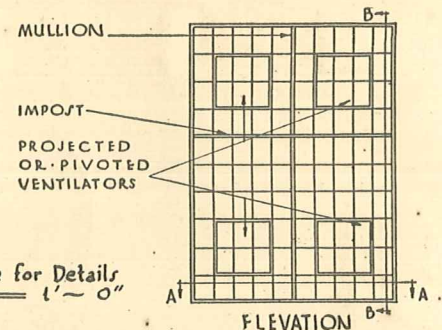
2. AT CUT STONE SILLS OR WOOD SILLS WHERE NOTCHING OF SILLS IS UNDESIRABLE (WHEN SPECIFIED)

TABLE · II					
TYPE	12" x 18" GLASS NO. OF LIGHTS WIDE	DESIGN OF IMPOST	A DIM	B DIM	14" x 20" GLASS NO. OF LIGHTS WIDE
USED FOR SINGLE UNIT OPENINGS · ONLY					
1	3 TO 6	TWO · ANGLES ONE · 2½" x 1½" x ¾" ONE · 1" x 1" x ½"	2"	¾"	3 TO 6
USED FOR BOTH SINGLE AND MULTIPLE UNIT OPENINGS					
2	3 TO 9	TWO · ANGLES 2½" x 2½" x ¾"	5"	¾"	3 TO 8
3	10 TO 13	TWO · ANGLES 2½" x 2½" x ¾" ONE · 6" x 1½" PLATE — OR —	5¼"	¾"	9 TO 11
4		ONE · 4" CHANNEL ONE · ANGLE 3½" x 2½" x ¼"	5¼"	½"	
5	14 TO 18	TWO · ANGLES 3" x 3" x ¾" ONE · 6¼" PLATE — OR —	6⅞"	½"	12 TO 16
6		ONE · 6" CHANNEL ONE · ANGLE 4" x 3" x ¾"	6⅞"	½"	



JAMB                                  MULLION                                  JAMB

IN · MULTIPLE · UNIT · OPENINGS — EACH · MULLION · ADDS · 2" TO THE SUM OF THE WINDOW DIMENSIONS



LIGHTS HIGH	12"x 18" GLASS				14"x 20" GLASS			
LIGHTS WIDE	3	4	5	6	3	4	5	6
2	A	A	A	A	A	A	A	A
3	A	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A	B
5	B	B	B	B	B	B	B	C
6	C	C	C	C	D	D	D	D
7	D	D	D	D	D	D	D	E

MULLION AND SASH BAR DETAILS  
See Table at Left  
Scale 3" = 1'-0"

(A) (B) (C) (D) (E)

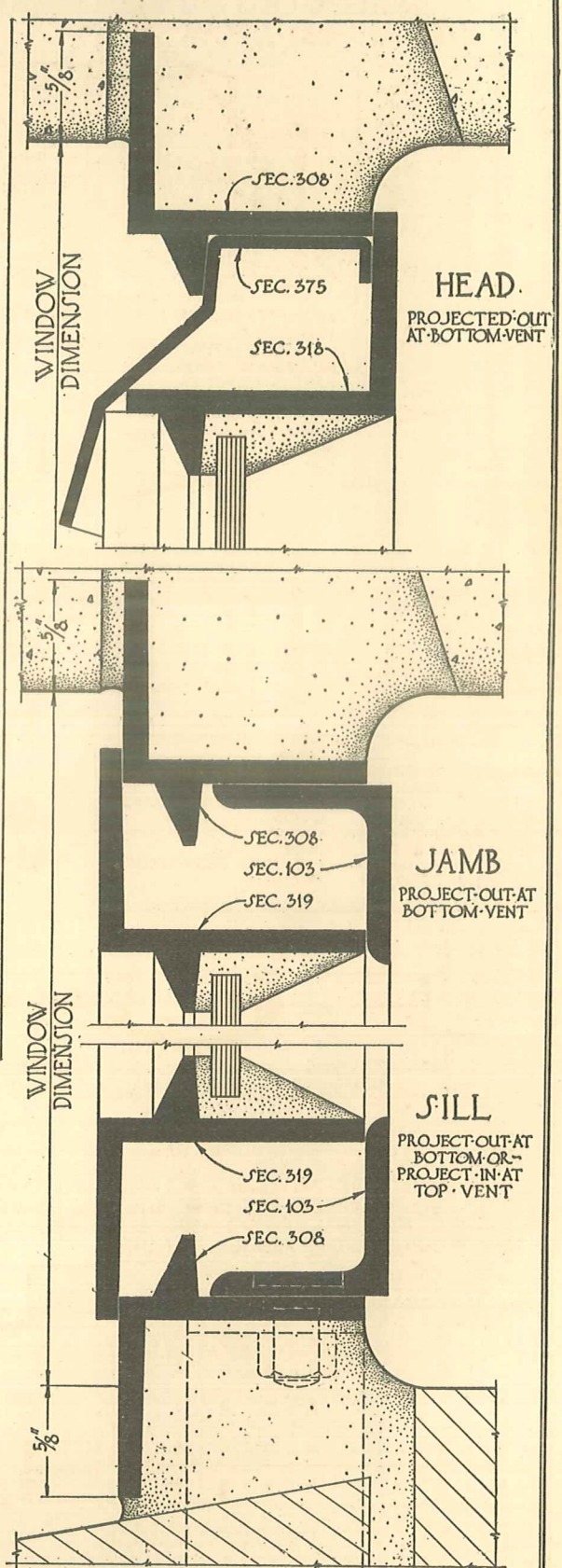
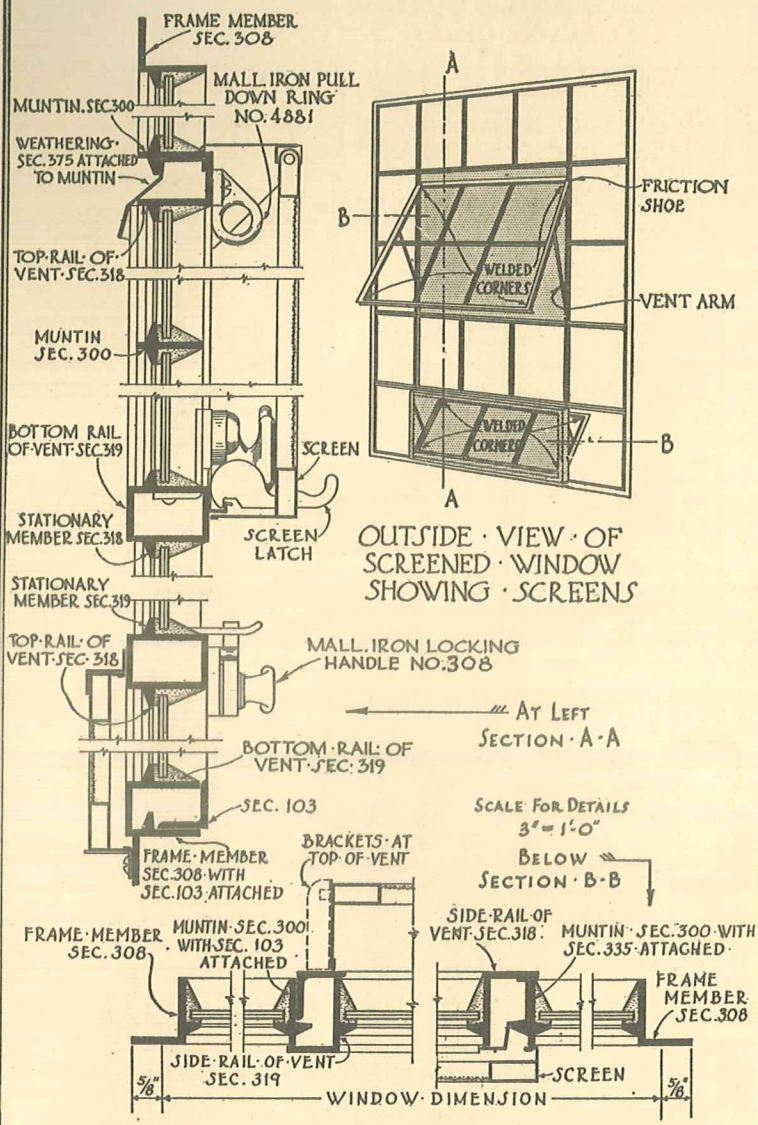
SPECIAL-MULLION FOR UNITS LARGER THAN STANDARD

MICHAEL FLYNN  
MANUFACTURING CO.  
LUPTON  
WINDOW PRODUCTS

MILLIONS and IMPOSTS  
LUPTON • PIVOTED • COMM'L • PROJECTED • WINDOWS

PLATE • N<sup>o</sup>  
605  
APRIL • 1936



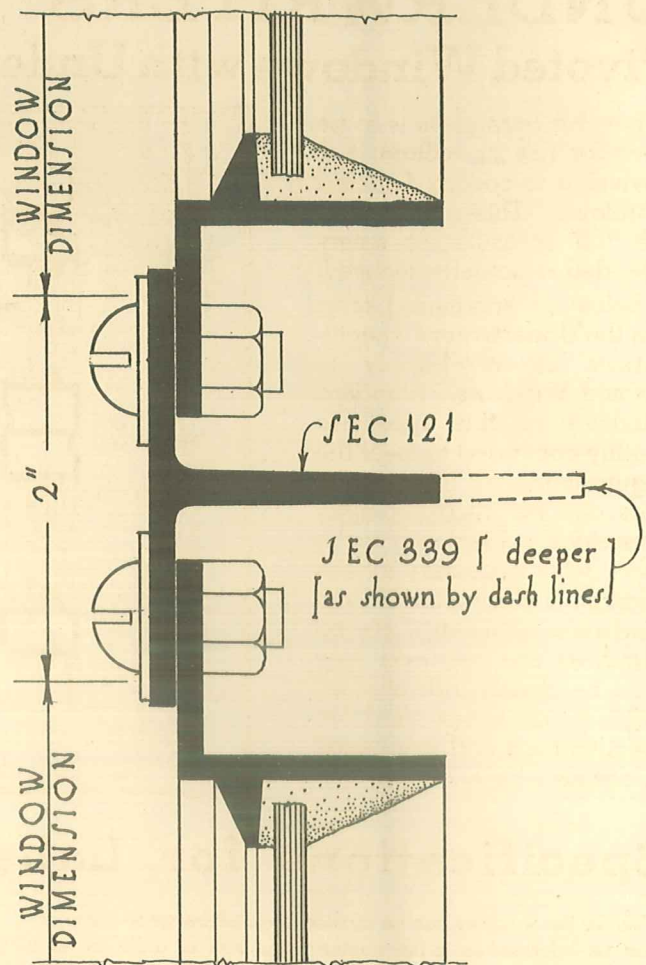
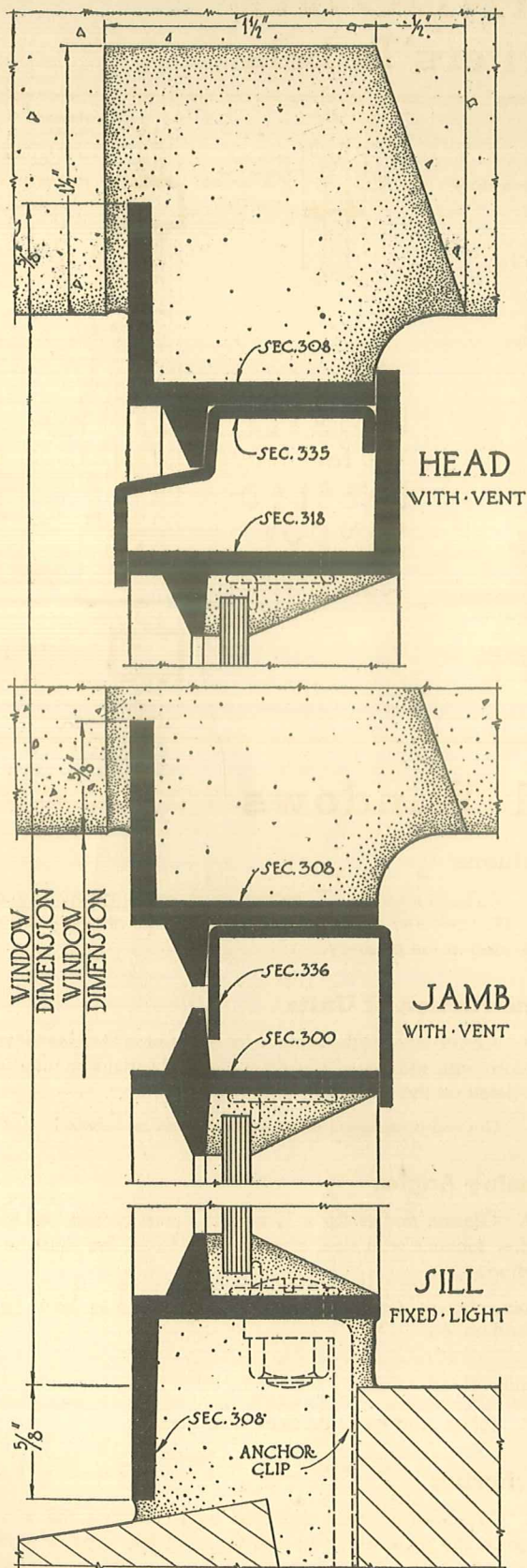


MICHAEL FLYNN  
MANUFACTURING CO.  
LUPTON  
WINDOW PRODUCTS

FULL SIZE SECTIONS...  
...SCREENING DETAILS  
LUPTON COMMERCIAL PROJECTED WINDOWS

PLATE N°  
503  
APRIL 1936



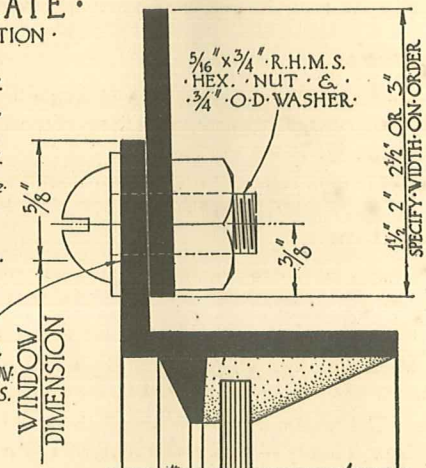


### • JAMB PLATE •

• FULL-SIZE SECTION •

Jamb plates are furnished for projected and pivoted windows when specified and mentioned in contract for windows. They are shipped unattached and are bolted to windows at the time of installation.

1/4" HORIZONTAL SLOTS IN FLANGE OF WINDOW PERMIT ADJUSTMENTS.



MICHAEL FLYNN  
MANUFACTURING CO.  
LUPTON  
WINDOW PRODUCTS

FULL-SIZE-SECTIONS  
LUPTON PIVOTED WINDOWS

PLATE-Nº  
606  
APRIL 1936

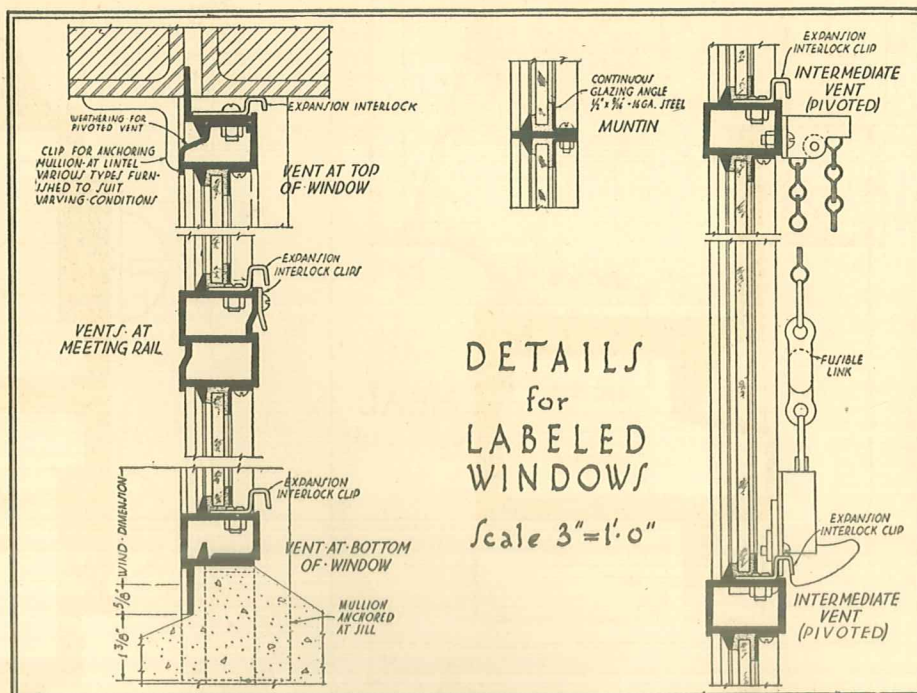


# UNDERWRITERS' WINDOWS

## Pivoted Windows with Underwriters' Labels

Wherever wire glass is to be used for fire protection it is advisable to specify Labeled Windows. This insures that the full measure of safety intended is actually secured.

Below in condensed form are the Underwriters' specifications as they apply to Pivoted Windows. Standard windows of this type are readily converted to meet the requirements for labels. Orders can be filled promptly from stock, subject only to the short delay necessary for the addition of glazing angles and hardware. When Labeled Windows are required they must be clearly indicated on original drawings and in specifications and mentioned in contract for windows.



## Specifications for Labeled Windows

Before the windows can be labeled the underwriters' inspector must be informed as to the number and size of units in each masonry opening and the details at head, jams and sill. The latter is required so that the proper anchoring connections may be furnished.

### Opening Sizes

1. Single Unit openings may not exceed 84 sq. ft. area. Neither width nor height may exceed 12 ft.
2. Multiple unit openings may not exceed 12 ft. in height. Opening width is not limited, but no unit may exceed 7 ft. in width.

### Glass Sizes

3. Maximum exposed glass area of single light is 350 sq. in. Maximum dimensions measured tip to tip of glazing angles are 48 ins. horizontally, 54 ins. vertically.

Note:—Glass in standard units is less than this.

### Ventilators

4. Hinges for pivoted vents must have stop lugs limiting opening to 135°.
5. No more than two ventilators may be used in a unit.
6. Maximum area of one ventilator is 20 sq. ft. Maximum dimensions are 5 ft. horizontally, 4 ft. vertically.

Note:—The maximum size recommended is 41x38 in. which is a ventilator 3 lights wide, 2 lights high, 14x20 in. glass.

### Hardware

7. All hardware must be malleable iron.
8. Pivoted ventilators are operated by spring catch and chain with fusible link. In some cases a cam handle (No. 141) or stay bar (No. 3115) may be used. (See Page 11.)

### Mullions

9. Mullions must be "T" section as shown in details C and D, page 14, anchored at head and sill by means of clips, bolts or embedded in the masonry.

### Construction of Units

10. Construction is the same as for the Lupton Standard Pivoted Windows with addition of glazing angles and expansion interlocks. (See detail on this page.)
11. Curved or splayed head units cannot be labeled.

### Glazing Angles

12. Glazing angles ( $\frac{9}{16} \times \frac{1}{2} \times \frac{1}{16}$  in.) must be fastened to the window sections with steel screws. The  $\frac{9}{16}$  in. leg must be up-standing.

Note:—Small lights up to 100 sq. in. area may have  $\frac{5}{16}$  in. up-standing leg.

### Glass

13. Glass must be  $\frac{1}{4}$  in. thick wire glass.

### Anchoring

14. Windows must be anchored by embedding the window flange in the masonry or by using any of the clips or anchors illustrated on page 14. Spacing of anchors is different from the standard and is as follows:

At Head or Sill—One not more than  $8\frac{1}{4}$  in. from each end of frame member and one approximately at center of each light.

At Jamb—One not more than 12 in. from each end of frame member and one approximately at center of each light.

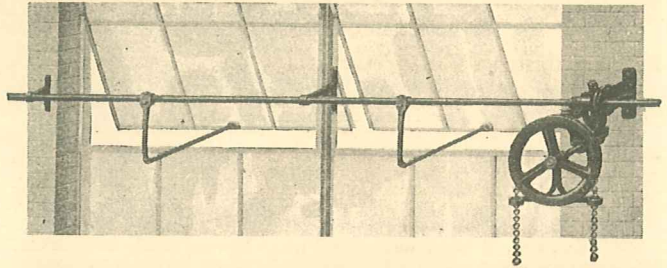


# MECHANICAL OPERATORS

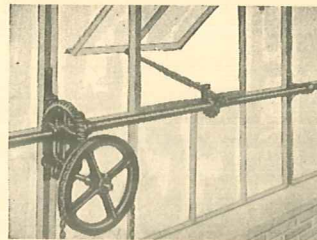
## For Pivoted and Continuous Windows

Mechanical Operators for Pivoted and Continuous Windows are available in two general types—tension type and torsion type. Torsion operators prove economical in most cases, but where the requirements exceed the limits of torsion operators a tension operator is recommended, details of which must conform to individual requirements.

With torsion operators ventilators are controlled by lever arms (Lever Type Operator) or racks and pinions (Rack and Pinion Operator) mounted on a horizontal shaft which is supported in brackets attached to wall or window mullions. Power is applied to the horizontal shaft through a worm and gear which also locks the ventilators at the desired degree of opening. Worm and gear may be open type or fully enclosed packed in grease and may be operated by hand chain, hand wheel or electric motor. Electrical power usually proves economical only for Rack and Pinion Operator. Details are given on pages 19 and 20.



Above. With the Lever Type Operators the ventilators are controlled by operating arms clamped to the horizontal shaft and connected to the vent by steel vent rods.



At left. Rack and Pinion Operator. Pinion gears securely attached to horizontal shaft operate the steel bar racks to open and close the ventilators.

## Lever Type Operator — Specifications

### Work Included

1. Furnish and install where shown on drawings Lever Type Operating Device, as supplied by Michael Flynn Mfg. Co., Philadelphia, Pa.

### Materials and Construction

2. Power shall be a machine cut steel worm operating a gray cast iron segment worm gear assembled with a gray cast iron yoke and supporting bracket adapted for rigid attachment to building construction (or by means of extension clips, to window mullion). The hub of the segment gear shall be drilled to fit the power transmission line and shall be tightly secured to it with set screws so as to rotate the line on the gear axis.

Note:—This will operate runs up to 40 ft. on each side of power, and no more than 12 average size ventilators.

3. Power shaft shall be 1 in. standard black steel pipe joined into a continuous line by malleable iron clamp couplings.

4. Shaft shall be supported by gray iron (or malleable iron) brackets attached to the window mullions or to the building construction.

5. Gray iron (or malleable iron) operating arms, one to each ventilator, shall be rigidly attached to the shaft.

6. Connection between the operating arm and the ventilator shall be made by a steel vent rod and a gray iron bracket mounted on the ventilator. Pivot pins at both ends of the vent rod shall be brass.

Note:—Specify operation by chain or by vertical steel shaft as desired.

7. Chain Operation—Power shall be operated by No. 6 Jack hand chain, operating over a chain wheel and guided by a guard. Both wheel and guard shall be gray iron castings. Wheel shall be accurately drilled, mounted on worm shaft and securely held by setscrews. Chain shall terminate approximately 2 ft. above the floor.

Note:—Where building construction makes it impractical to hang the chain directly vertical from the power (as in monitor window installations) single and double chain idlers are furnished if clearly indicated on original drawings and in specifications, and mentioned in contract for operators.

8. Steel Shaft Operation—Power shall be operated by a vertical  $\frac{3}{4}$  in. round steel shaft, coupled directly to the worm shaft with a gray iron coupling. The shaft shall be supported by adjustable gray iron brackets spaced not over 6 ft. apart, one bracket always being placed at the lower end of the shaft, approximately 4 ft. above the floor.

Note:—Specify (a) or (b) as desired.

9. (a) (Wheel in horizontal plane). A gray iron hand wheel and handle shall be mounted on the lower end of the shaft.

(b) (Wheel in vertical plane). The shaft shall be directly connected to a pair of miter gears assembled with a hand wheel and handle on an adjustable bracket. These parts to be gray iron.

Note:—When specified and mentioned in contract for operators a gray cast iron housing is furnished for the miter gears.

Note:—Where building construction makes it necessary, universal joints for the vertical shaft are furnished if clearly indicated on original drawings and in specifications and mentioned in contract for operators. The angle between two adjacent lengths of shaft must not be less than  $135^\circ$ .

### Erection

10. All operating devices shall be erected and adjusted to proper working order by the window contractor.

### Painting

11. All operating devices shall have one coat of manufacturer's standard, gray paint, applied before shipment.

Note:—The following should be provided for in the paint specifications—one coat of red lead and oil should be applied after erection followed by one or more coats of finishing paint as required.



# Rack and Pinion Operator—Specifications

## Work Included

1. Furnish and install where shown on drawings Rack and Pinion Operating Device as supplied by Michael Flynn Mfg. Co., Philadelphia, Pa.

## Materials and Construction

2. Power. (Note:—Specify (a) or (b) as desired.)

(a) Power shall be a worm and gear having a 30 to 1 or 40 to 1 ratio as required. Worm to be machine cut, worm wheel to be gray iron with cast teeth and fastened to the horizontal shaft with two setscrews. Worm and wheel shall be held in mesh by a gray iron yoke.

(b) Power shall be a worm and gear having a 20 to 1 ratio. Worm to be machine cut and provided with a thrust bushing. Worm wheel to be gray iron with cut teeth and securely fastened to the horizontal shaft. Both worm and gear shall be enclosed in case, packed with grease.

3. Power shall be mounted on a gray iron bracket adapted for rigid attachment to building construction or by means of clips to window mullion.

4. and 5. Power Shaft (See specifications for Lever Type Operator) paragraphs 3 and 4.

Note:—In addition to the 1 in. standard pipe, 1 in. extra heavy pipe is available and may be used if required.

6. One rack and pinion shall be provided for each ventilator. Rack shall be of  $\frac{1}{4}$  x 1 in. steel with cut teeth to mesh with a malleable iron pinion attached to the horizontal shaft.

7. Rack and pinion shall be held in mesh by two steel yokes with two brass bushed steel rollers.

## 8. RACKS.

Note:—Racks may be straight or curved and may be attached at top or bottom of center pivoted ventilators. Specify type and where attached.

9. A gray iron hinge shall be provided for attaching the rack to the ventilator.

## 10 to 14. HAND OPERATION.

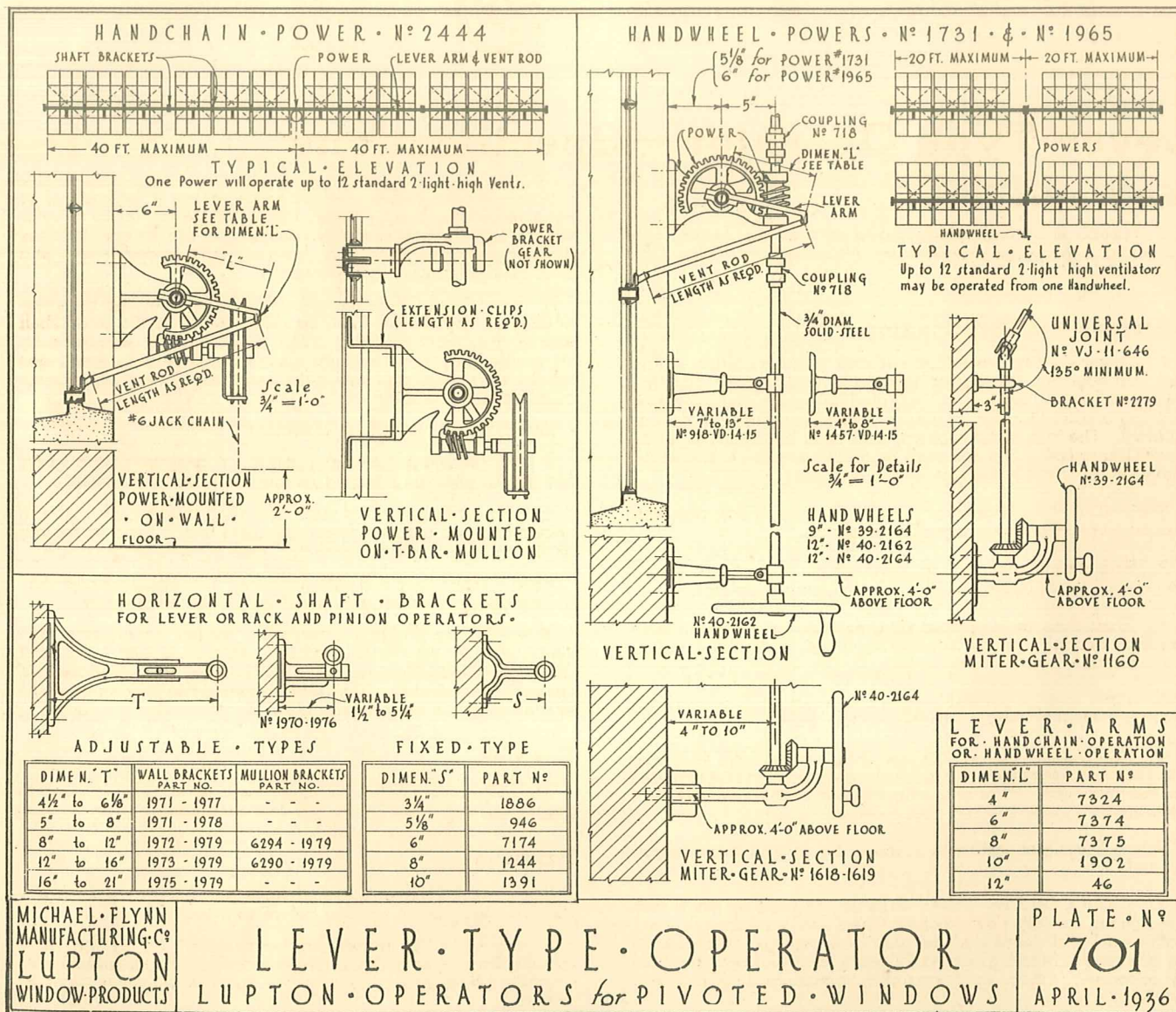
Note:—See specifications for Lever Type Operator, paragraphs 7 to 9 (b) inclusive, on preceding page.

15. MOTOR OPERATION—Power shall be operated by a motor bolted to the base of power and geared to power with a spur gear. Limit switch shall be attached to power. Push button with open, closed and stop buttons and a motor control panel as well as limit switch shall be furnished by manufacturer.

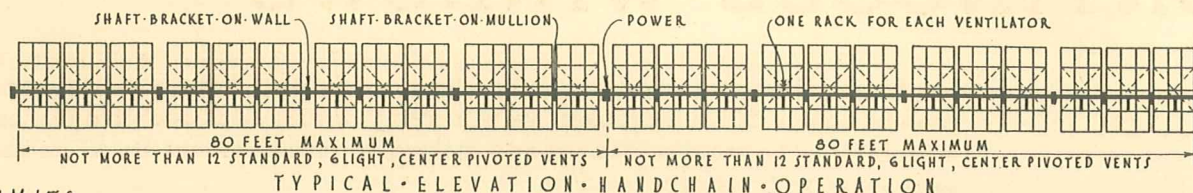
Note:—Conduit wiring and line switch are to be furnished by the electrical contractor.

## Erection and Painting

Note:—Same as for Lever Type. See preceding page.

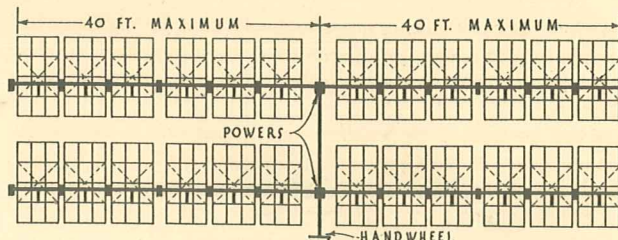






#### LIMITS

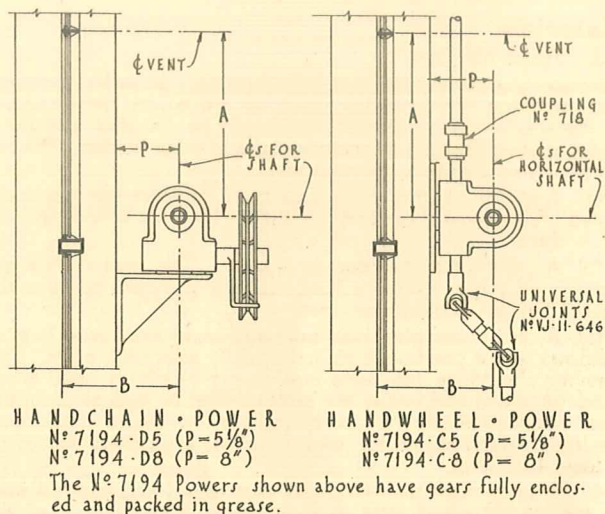
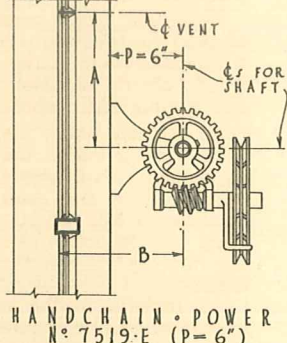
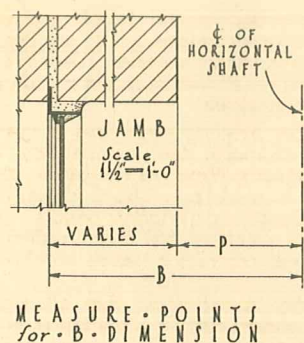
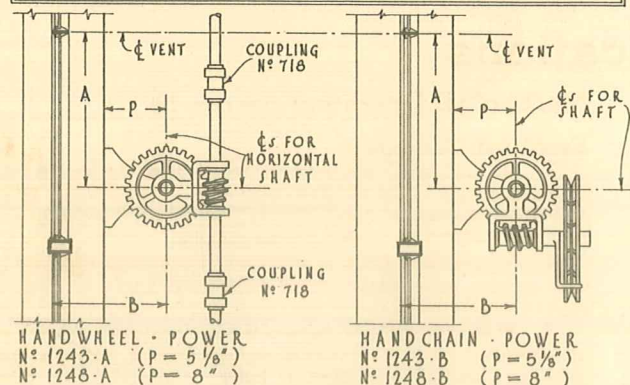
CENTER-PIVOTED-VENTS. (PIVOTED 2" ABOVE-CENTER)	SEE-DIAGRAMS										
TOP-PIVOTED-VENTS (PIVOTED 4" DOWN FROM-TOP)	LIMITS-ARE-ONE-HALF-THOSE FOR-CENTER-PIVOTED-VENTS.										
CONTINUOUS-WINDOWS For Continuous Windows Shaft is 1" extra strong pipe, Racks are spaced 5'-0" $\phi$ to $\phi$ and Power is located at center of run.	<table> <tr> <th>WINDOWS</th><th>LENGTH OF RUN</th></tr> <tr> <td>3 FT. HIGH</td><td>100 FEET</td></tr> <tr> <td>4 " "</td><td>90 "</td></tr> <tr> <td>5 " "</td><td>60 "</td></tr> <tr> <td>6 " "</td><td>40 "</td></tr> </table>	WINDOWS	LENGTH OF RUN	3 FT. HIGH	100 FEET	4 " "	90 "	5 " "	60 "	6 " "	40 "
WINDOWS	LENGTH OF RUN										
3 FT. HIGH	100 FEET										
4 " "	90 "										
5 " "	60 "										
6 " "	40 "										



TYPICAL ELEVATION OF MULTIPLE BANK HANDWHEEL OPERATION

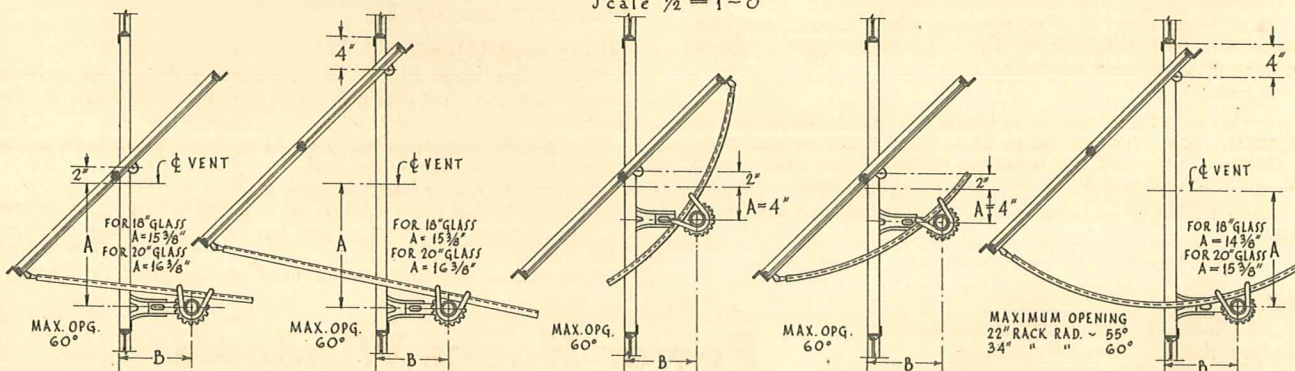
NOTE Vertical and Horizontal Shafts, Shaft Brackets and Operating wheels are the same as for the Lever Type Operator and are shown on Plate N° 701 see preceding page.

Scale for Details  $\frac{3}{4}" = 1'-0"$



#### APPLICATION of RACK & PINION SETS TO VENTILATORS

Scale  $\frac{1}{2}" = 1'-0"$



DIMENSION "B" depends upon type of power used and depth of inside reveal. See Details of Powers.

LENGTH of RACK depends upon method of attaching rack, size of ventilator and Dimension B. It may vary from approx. 2'-6" to 4'-0".

MICHAEL-FLYNN  
MANUFACTURING-CO  
LUPTON  
WINDOW-PRODUCTS

RACK & PINION OPERATOR  
LUPTON OPERATORS for PIVOTED WINDOWS

PLATE-N°  
702  
APRIL-1936



# CONTINUOUS WINDOWS

The information relating to Continuous Windows on this and following pages will be helpful in laying out elevations and preliminary details. Where special conditions present a more difficult problem we will gladly furnish additional information, submitting tentative window designs and making recommendations based on previous experience with this type window.

Lupton Continuous Windows are effectively used for daylighting and ventilating in sidewalls of industrial buildings and all the familiar types of roof construction including the Lupton V-Type Roof Design.

Units are assembled by welding and joined end to end with expansion covers to form long runs. Units are 20 ft. long except where shorter ones are needed. Operated runs on roofs usually have a stationary end panel 2 ft. long at each end. Overall length

of windows should be in multiples of 2 ft. See details on next page. Muntins are spaced approximately 2 ft. apart, glass being 23 in. and 24 in. wide, combined as needed to make up the required length. Heights of units, opening and glass, are as follows:

Unit	Opening	Glass.	Unit	Opening	Glass
3 ft.	2' 10½"	33 in.	5 ft.	4' 10½"	57 in.
4 ft.	3' 10½"	45 in.	6 ft.	5' 10½"	69 in.

## Specifications

### Work Included

1. Furnish and install where shown on drawings, Lupton Continuous Windows, manufactured by Michael Flynn Mfg. Co., Philadelphia, Pa.
2. Window manufacturer shall furnish drawings showing location of punching in structural steel for attaching hinges.

### Materials

3. Frame Members.

Note:—Structural steel members forming frames for windows, and punching in frames for attaching hinges are not furnished by the window manufacturer and should be specified elsewhere under proper heading in specifications of other trades. The following frame members are required:

(a) A continuous girt angle at the head, to which the hinges are bolted. This angle should not be smaller than 3 x 3 in. x ¼ in. to ⅜ in. thick.

(b) A continuous member at the sill. The face of this girt (usually an angle or channel) should be in the same plane as the face of the girt angle at the head.

(c) A continuous girt angle between upper and lower lines of windows where one line is placed directly above the other. This member should be the same size as girt angle at head when windows above and below are both vertical or both sloping, but when windows above are vertical and windows below are sloping, the leg to which hinges for lower windows are bolted, should be at least 4 in. long.

4. Window Sections.—Top rail, bottom rail and end rail shall be special hot rolled solid steel sections. Bottom rail shall not project beyond surface of glass on the outside. Overlapping end rail shall be 13 gauge steel. Muntins shall be special hot rolled steel T section.

5. Jamb weathering of 13 gauge steel plate, formed, shall be furnished (but not installed) by the window contractor where window extends between pilasters.

6. Flashings.

Note:—Under proper headings elsewhere in specifications of other trades, specify sheet metal flashing at joints of and over gaps between girts, and condensation gutters (where required). These are not furnished by the window manufacturer.

7. Steel clips shall be furnished for storm panels and stationary windows.

8. Glazing wedges shall be of galvanized pressed steel.

### Construction

9. All Lupton Continuous Windows shall be designed for outside glazing.

10. All units shall be straight and true with members in alignment and surfaces in a plane. All joints shall be rigid and tight. Members shall be coped, fitted together and arc welded along their entire length of contact.

11. Units shall be hung on malleable iron hinges with heavy bronze pins.

12. Muntins shall be continuous from top to bottom of unit. Joints at top and bottom rails shall be arc welded.

### Mechanical Operators (See page 18)

#### Erection (See page 3)

13. All Lupton Continuous Windows shall be erected in prepared openings by the window contractor. They shall be set plumb and true, properly aligned, securely attached to structural members and properly adjusted before glazing.

14. Where long lines of windows occur units shall be joined end to end with weatherproof expansion joints at intervals of approximately 20 ft.

15. A short stationary panel shall be furnished at each end of an operated line of windows except where window extends between pilasters and special jamb weathering (described in paragraph 5) is used.

Note:—(a) Storm panels attached to end panels and overlapping the operated windows for a distance of 2 ft. are desirable if windows are to remain open in stormy weather. They are furnished if clearly indicated on original drawings and in specifications and mentioned in contract for windows.

(b) Include under the proper heading elsewhere in specifications of other trades, that all structural steel members that come in contact with Lupton Continuous Windows shall form straight parallel lines and shall be located, punched and flashed in accordance with the Lupton Continuous Window details. Where there is a deflection structural members shall be straightened in the field by the structural steel contractor before windows are erected.

(c) Include in the masonry specification that all masonry openings shall be accurately constructed in accordance with the Lupton Continuous Window details and that all mortar, grouting, pointing, etc., shall be done by the mason contractor after windows have been erected.

#### Painting (See page 3)

#### Glass and Glazing

Note:—(See page 3.) Glass and Glazing should be included under the proper heading elsewhere in the specifications of other trades.

(a) Specify vertical ribbed glass ¼ in. thick. (Ribs to be placed on the side least exposed to dust.)

(b) Specify special steel window putty.

(c) Specify that glass shall be set in a bed of putty and secured by steel glazing wedges supplied by the window manufacturer. Four wedges per light shall be used on windows 3 or 4 ft. high and six wedges per light shall be used on windows 5 or 6 ft. high.

## Power House Windows

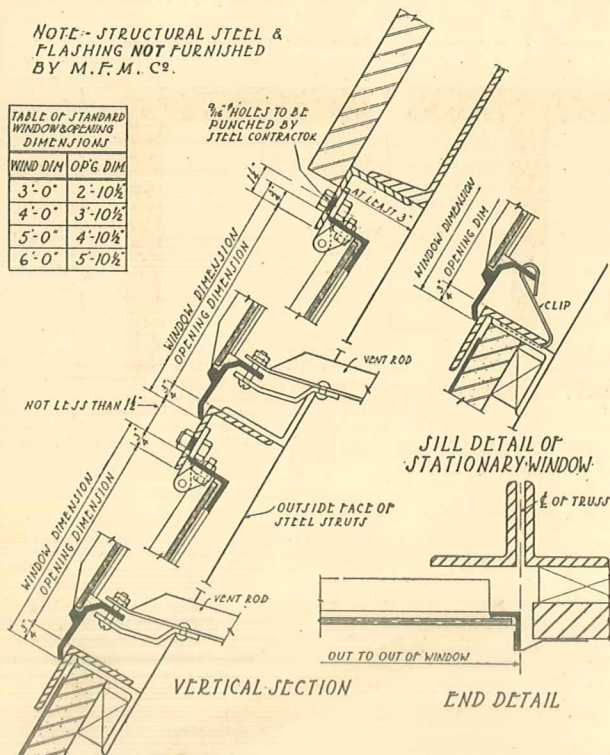
Power House Windows are made of the same sections and with the same welded construction as Lupton Continuous Windows. Units are set in a structural steel frame furnished by the window manufacturer.

Both the window and operator are usually designed to meet special conditions and therefore our sales representative should be consulted for details.

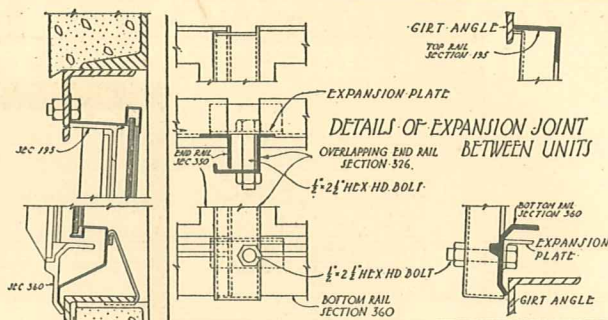


NOTE:- STRUCTURAL STEEL & FLASHING NOT FURNISHED BY M.F.M. CO.

WIND DIM	OP'G DIM
3'-0"	2'-10 1/2"
4'-0"	3'-10 1/2"
5'-0"	4'-10 1/2"
6'-0"	5'-10 1/2"



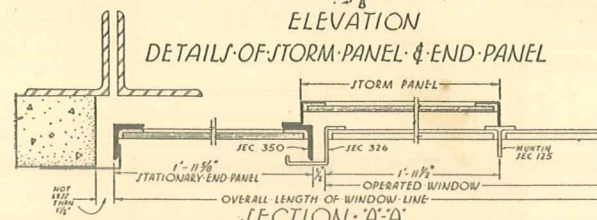
A



SECTION B-B

ELEVATION

DETAILS OF STORM PANEL & END PANEL



SECTION A-A

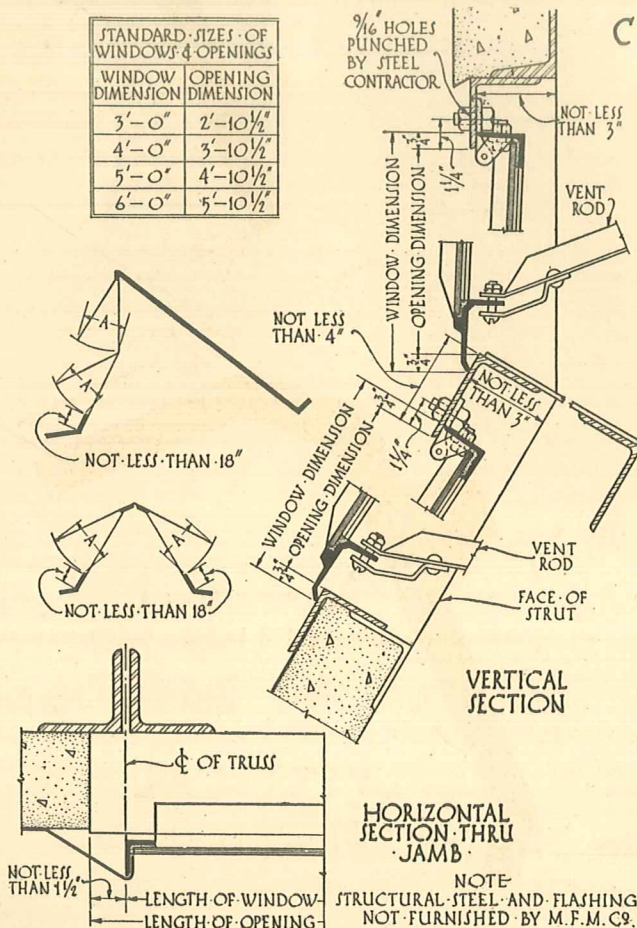
NOTE:- OVERALL LENGTH OF WINDOW SHOULD ALWAYS BE EVEN MULTIPLES OF 2'-0" IF EVEN FEET DIMENSIONS ARE NOT MAINTAINED SPECIAL END UNITS ARE REQUIRED, DELAYING SHIPMENT OF WINDOWS

B

WINDOW DIMENSION	OPENING DIMENSION
3'-0"	2'-10 1/2"
4'-0"	3'-10 1/2"
5'-0"	4'-10 1/2"
6'-0"	5'-10 1/2"

3/16" HOLES PUNCHED BY STEEL CONTRACTOR

C

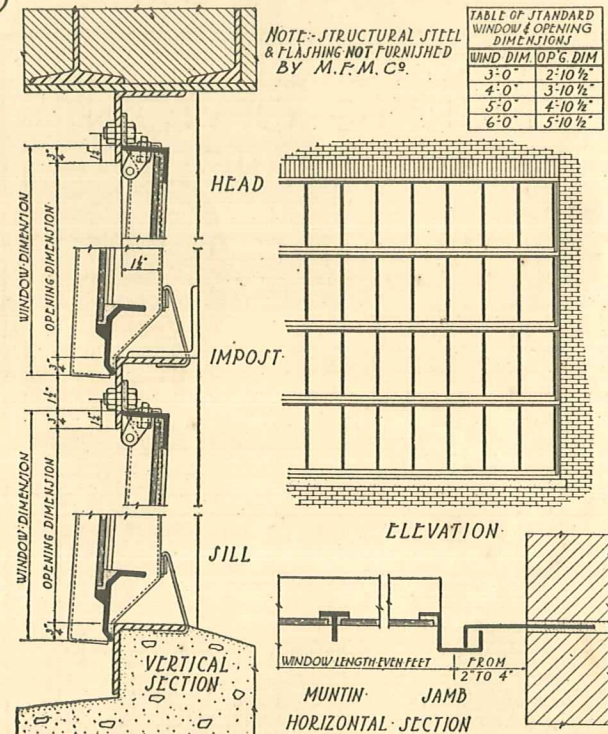


A-Sloping Windows  
B-Storm and End Panels and Expansion Joints.  
C-Vertical and Sloping Windows  
D-Vertical Sidewall Windows.

D

NOTE:- STRUCTURAL STEEL & FLASHING NOT FURNISHED BY M.F.M. CO.

WIND DIM	OP'G DIM
3'-0"	2'-10 1/2"
4'-0"	3'-10 1/2"
5'-0"	4'-10 1/2"
6'-0"	5'-10 1/2"

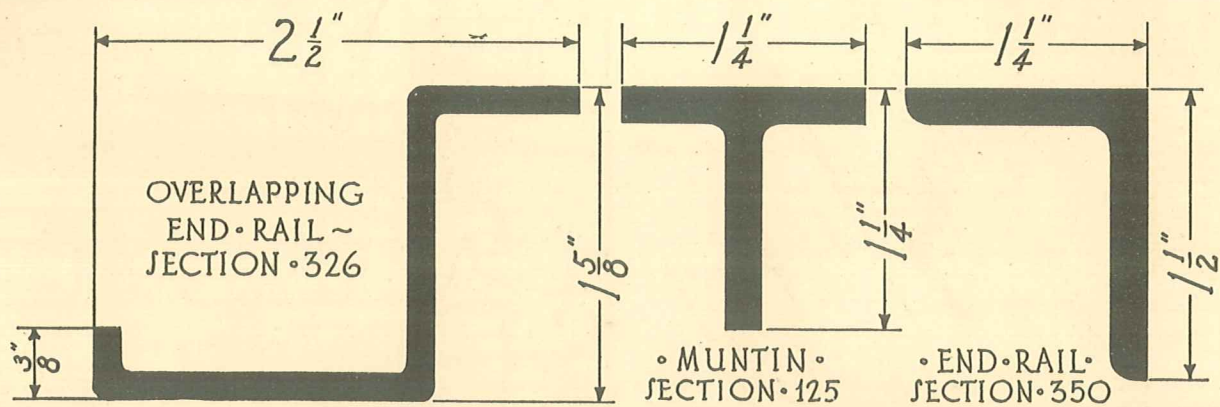


MICHAEL FLYNN  
MANUFACTURING CO  
LUPTON  
WINDOW PRODUCTS

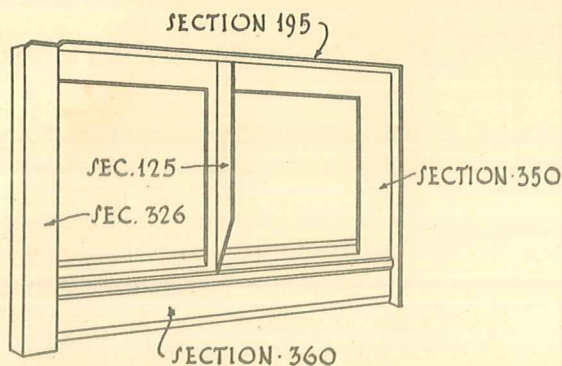
INSTALLATION DETAILS  
LUPTON CONTINUOUS WINDOWS

PLATE N°  
801  
APRIL 1936



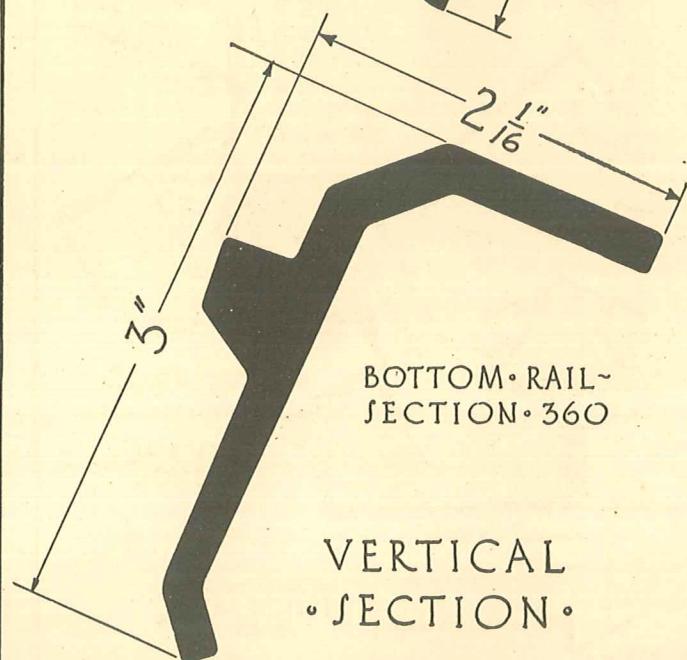
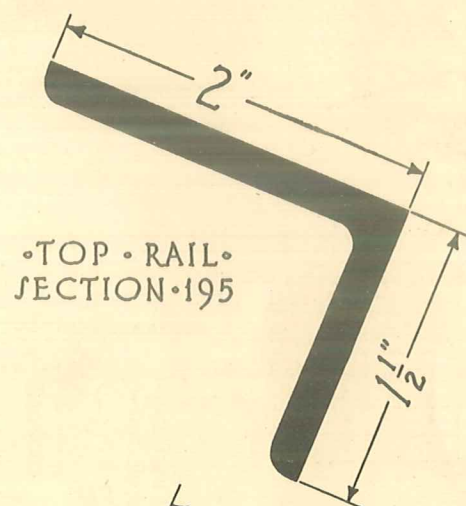
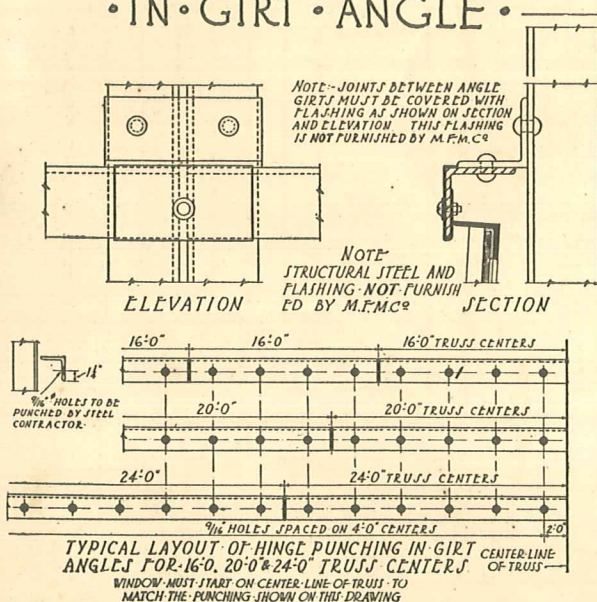


## HORIZONTAL • SECTION



• DIAGRAM • OF • UNIT •  
• VIEWED • FROM • OUTSIDE •

## HINGE • PUNCHING • AND FLASHING • OF • JOINT • IN • GIRT • ANGLE •



MICHAEL • FLYNN  
MANUFACTURING • CO  
LUPTON  
WINDOW • PRODUCTS

FULL • SIZE • SECTIONS  
LUPTON • CONTINUOUS • WINDOWS

PLATE • N°  
802  
APRIL • 1936



# INDUSTRIAL DOORS

Lupton Industrial Doors are built to withstand successfully the constant and oftentimes rough usage given them in buildings used for industrial purposes.

They are made in a wide range of sizes suitable for exterior and interior doors in all types of industrial buildings, power houses, warehouses, etc.

## Specifications

### Work Included

1. Furnish and install where shown on drawings, Steel Industrial Doors, manufactured by Michael Flynn Mfg. Co., Philadelphia, Pa.

### Material and Construction

Note:—Frames are not furnished for slide doors. Where frames are desired for swing doors, specify as follows:

2. Frames shall be furnished for swing doors where noted on plans (or as listed).

3. Frames shall be made of 4 in. structural channel. Top corners shall be bolted together by means of clips. Jambs shall be braced at bottom with structural angles to preserve square lines of frame during shipment.

4. All doors shall have  $1\frac{1}{2}$  x  $\frac{1}{2}$  in. structural channel stops at head and jambs. Stops shall be attached to frames with round head machine screws not over 15 in. on centers.

5. Anchors of  $\frac{3}{16}$  in. steel plate bent in Z shape shall be attached to jambs of frame not over 3 ft. on centers.

6. Doors up to and including those 10' 0" in height shall have rails and stiles of  $1\frac{1}{2}$  x  $2\frac{5}{8}$  in. x 13 ga. welded steel tubing.

7. Doors over 10' 0" in height shall have rails and stiles of 3 x 2 in. x 13 ga. welded steel tubing.

8. Rails and stiles shall be mitered at corners—welded and ground flush.

9. All doors shall have a 14 ga. steel panel insert in the lower part of the door and standard rolled steel window glazing panel in the upper portion, both panels to be attached to the rails and stiles by machine screws.

10. Steel "T"-bar astragals shall be furnished for double doors.

### Hardware

11. Swing doors made of  $1\frac{1}{2}$  x  $2\frac{5}{8}$  in. tube shall have ball bearing butt hinges. Three hinges for doors up to and including those 8' 0" high, four hinges for doors over 8' 0" high. Swing doors made of 3 x 2 in. tube shall have three strap hinges per leaf.

12. Tracks, track brackets and roller bearing trolleys together with adjustable door guides and door stops shall be furnished for slide doors.

13. Double slide doors shall have cane bolt on dead leaf. Double hinged doors shall have top and bottom bolts on dead leaf with suitable keepers, for installation in (state whether floor is wood or concrete).

14. Hinged doors shall be equipped with (Specify a or b),

(a) Flat steel latch and keeper with malleable iron handle on outside.

(b) Mortise lock furnished with malleable iron (or bronze) handles, cylinder and thumb latch.

15. Slide doors shall be equipped with (Specify a or b),

(a) Flat steel latch and keeper with flush handle on outside.

(b) Mortise lock with flush grip, cylinder and thumb latch.

Note:—The following hardware is furnished if clearly indicated on original drawings and in specifications and mentioned in contract for windows.

(1) Cylinder substituted for thumb latch.

(2) Master key systems.

(3) Polished bronze handles for swing door mortise lock.

(4) Panic hardware.

(5) Door checks.

(6) Bronze butt hinges.

Note:—All hardware wherever possible is fitted in the factory and shipped unattached, except in the case of single hinged doors with frames where frame, door and hinges are shipped assembled together.

### Erection (See page 3)

16. Lupton Steel Industrial Doors shall be erected by (state by whom) in accordance with details furnished by door manufacturer. Frames for swing doors shall be set plumb and square and securely anchored to the building construction. Slide doors shall be hung from tracks securely fastened to building construction. They shall be adjusted to give satisfactory operation. Hardware shall be applied according to door manufacturer's directions.

Note:—Where slide doors are hung outside on exterior wall flashing is required. This flashing is not supplied by door manufacturer.

### Painting (See page 3)

### Glass and Glazing

17. Glazing stops of  $\frac{1}{2}$  x  $\frac{5}{16}$  in. rolled steel angle section shall be furnished, shipped attached.













































Note:—(See also page 3.) Specify glass and glazing under proper heading elsewhere in specifications.

(a) Do not specify single thickness glass.

(b) Specify high-grade steel window putty (ordinary wood sash putty must not be used).

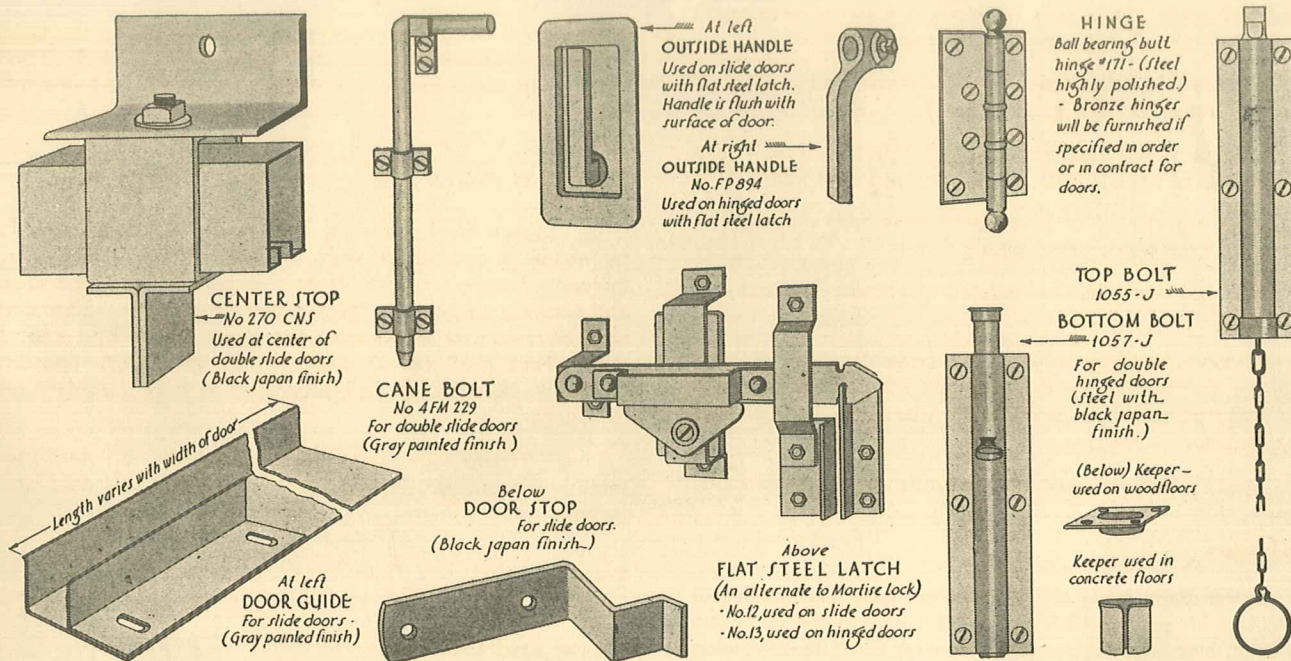
(c) Specify that Lupton Steel Industrial Doors shall be glazed from the inside; that the glass shall be set in a bed of putty and held by Lupton glazing angle stops.



			SINGLE DOORS - SWING OR SLIDE					DOUBLE DOORS - SWING OR SLIDE					
OPENING SIZES			SWING DOORS - 2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	5'-0"	6'-0"	7'-0"	8'-0"	10'-0"	
			SLIDE DOORS - 2'-4"	2'-10"	3'-4"	3'-10"	4'-10"	4'-10"	5'-10"	6'-10"	7'-10"	9'-10"	
			GLASS SIZE	11 3/4"	14 3/4"	11 3/4"	13 3/4"	13 3/4"	11 3/4"	14 3/4"	11 3/4"	13 3/4"	13 1/4"
SWING DOORS	SLIDE DOORS												
7'-0"	6'-10 1/2"												
7'-6"	7'-4 1/2"	19"											
8'-0"	7'-10 1/2"	22"											
10'-0"	9'-10 1/2"	34"											

NOTES:- Shaded units are carried in stock.  
Units are used interchangeably as swing or slide doors.  
Dimensions given in diagram are "OPENING DIMENSIONS" as indicated in details on Plates No 902 & No 903.  
Glass is not included with doors but glazing angles are furnished shipped attached.  
Where doors larger than 10' x 10' are required it is economic to use if possible the Opening Dimensions in the table at right

		SWING DOORS		SLIDE DOORS	
HEIGHTS		11	12	13	14
WIDTHS single doors		3	3 1/2	4	5
" double "		6	7	8	10
HEIGHTS		10'-10 1/2"	11'-10 1/2"	12'-10 1/2"	13'-10 1/2"
WIDTHS single doors		2'-10"	3'-4"	3'-10"	4'-10"
" double "		5'-10"	6'-10"	7'-10"	9'-10"



NOTES:- Drawing shows standard hardware. Tracks, hangers, etc. for slide doors are shown on details, see Plate No 903.  
The hardware listed here is optional and is furnished if clearly specified and mentioned in order or contract for doors.  
(a) Mortise Locks for swing or slide doors.  
(b) Iron or bronze Handles for Mortise Locks.  
(c) Cylinder - one or both sides of Mortise Lock.  
(d) Master Key Systems for Cylinders.

(e) Door checks.  
(f) Panic hardware.  
(g) Bronze butt hinges.  
When ordering locks always indicate hand and swing of doors - see diagrams on Plates No 902 & No 903.  
Wherever possible hardware is fitted in factory and shipped unattached, except in case of single hinged doors with frames where frame, door and hinges are shipped assembled.

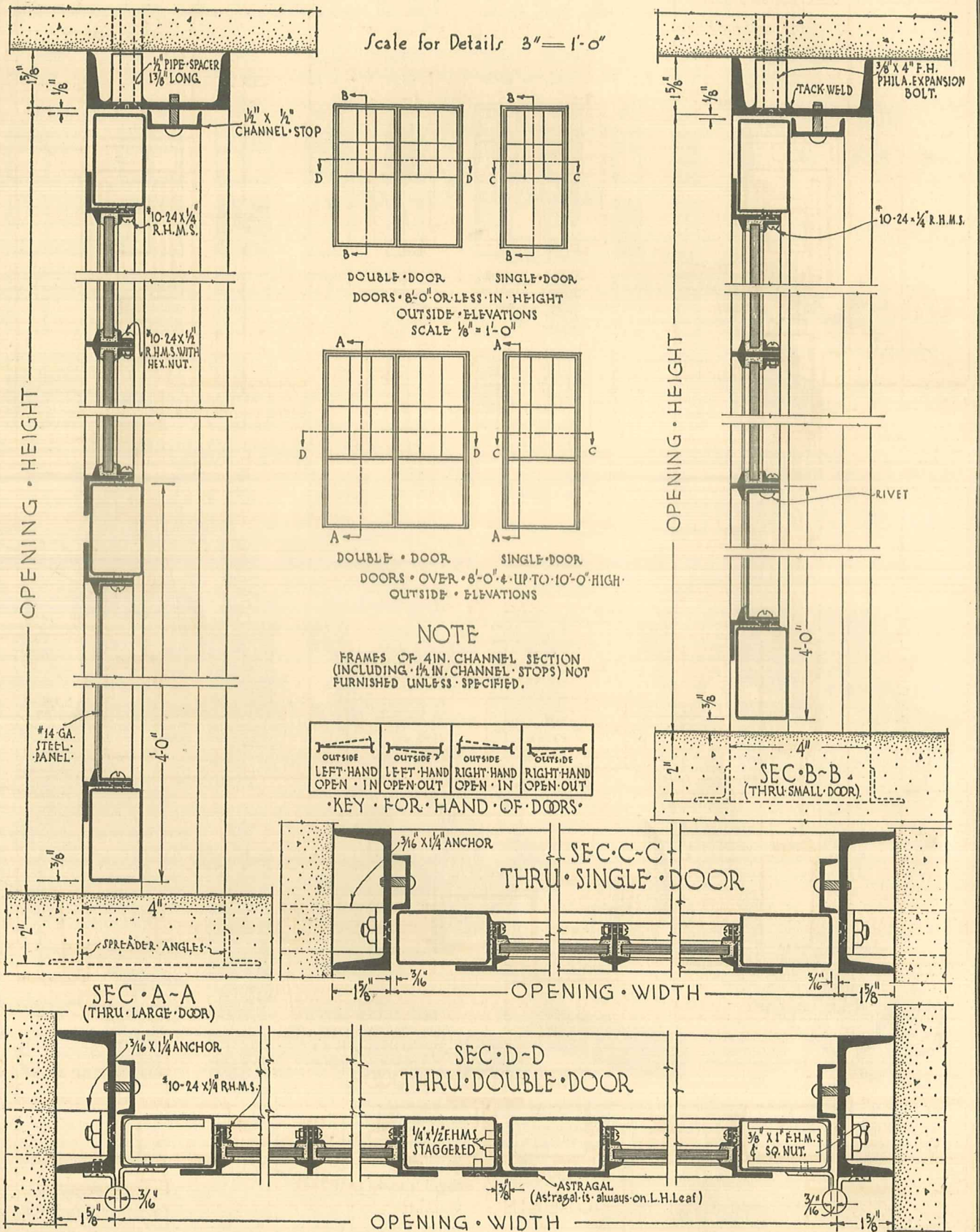
MICHAEL FLYNN  
MANUFACTURING CO  
LUPTON  
WINDOW PRODUCTS

HARDWARE and STD. SIZES  
LUPTON STEEL INDUSTRIAL DOORS

PLATE No  
901  
APRIL 1936



Scale for Details 3" = 1'-0"



MICHAEL FLYNN  
MANUFACTURING CO.  
LUPTON  
WINDOW PRODUCTS

DETAILS-SWING-DOORS  
LUPTON STEEL INDUSTRIAL DOORS

PLATE N°  
902  
APRIL 1936







# COMMERCIAL DOORS

Lupton Commercial Doors are designed for use as exterior or interior doors for garages, manufacturing plants, etc., where inexpensive steel doors are desirable. Lighter in construction than Industrial Doors, they are, within their size limits, a practical and economical product.

## Sizes and Construction

Doors are made only in stock sizes shown below. Stiles and rails are made of 18 gauge steel, mitered and welded at corners of door and the welds ground flush. The lower part of door has a 16 gauge steel panel and the upper part is made to receive glass. Frames are furnished for swing doors only and only when specified. They are made of steel plate. Flat steel anchors are provided at jambs and an expansion bolt at head.

## Hardware

All necessary hardware is included with doors except Hook Back No. 101 which must be specified if required. In ordering swing doors specify whether Mortise Lock or Lever Latch is desired.

## Erection (See page 3)

Door frames must be set plumb and square, securely anchored to building. Tracks for slide doors must be level and anchored securely.

Swing doors are drilled in shop for hinges and when Lock No. 97 is ordered doors are mortised and drilled to receive it. All other drilling must be done in field.

Single doors with frames are shipped assembled in frames. Double doors are shipped separately from frames.

## Glazing and Painting (See page 3)

See table below for glass sizes. Orders for doors do not include glass, but steel glazing stops are furnished, shipped attached. Always use steel window putty and glaze after doors are erected.

Doors are given one shop coat of gray paint, oven dried.

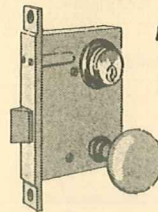
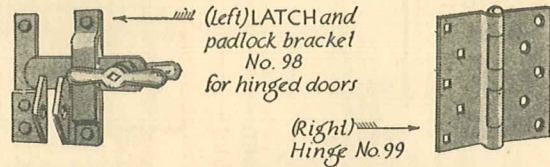
## Ordering

When ordering give the following information:

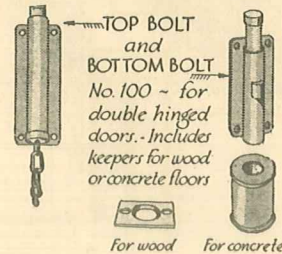
1. Symbol numbers of doors required (D-1, D-2, etc.).
2. Quantity of each type required.
3. Whether doors are to swing or slide and whether right or left hand. (See "Key for Hand of Doors" on next page.) If Swing Doors are ordered state also:—
  - a. Type of lock desired (No. 97 or No. 98).
  - b. If frames are required, give Door Frame Marks (see table below).
  - c. Whether or not Hook Backs are required.

## • H A R D W A R E •

Slide door Trolleys and Tracks are shown on Plate No. 931.

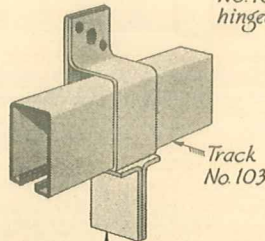


MORTISE LOCK  
No. 97 - For  
hinged doors

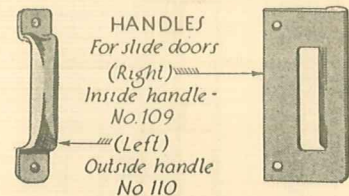


For wood For concrete

HOOK BACK  
No. 101 - For  
hinged doors

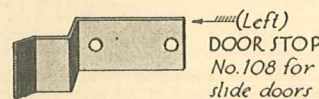


Track  
No. 103



HANDLES  
For slide doors  
(Right) Inside handle  
No. 109  
(Left) Outside handle  
No. 110

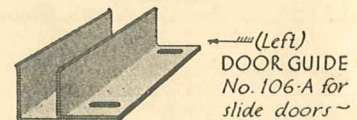
CENTER STOP  
No. 107-A - Located at  
center of track for  
double slide doors.



(Left)  
DOOR STOP  
No. 108 for  
slide doors

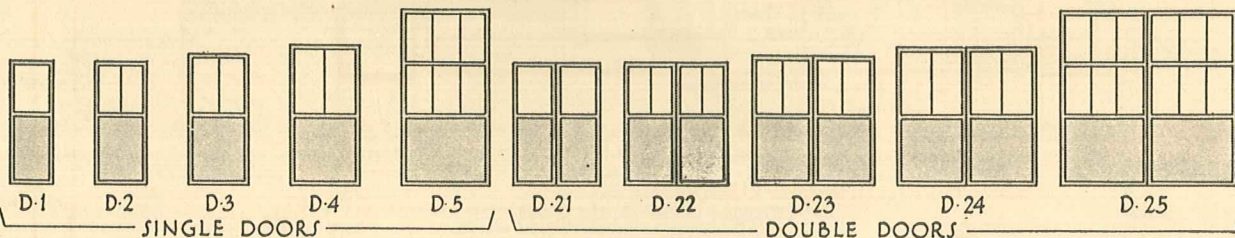


HASP and STAPLE  
No. 111 - for slide doors



(Left)  
DOOR GUIDE  
No. 106-A for  
slide doors

## • S T A N D A R D • S I Z E S •



SWING DOORS					SWING OR SLIDE		SLIDE DOORS			
Opening		Door Mark	Frame Mark	Catalog No. of Astragal	No. of Lights	Glass Size	Catalog No. of Astragal	Door Mark	Opening	
Width	Height								Width	Height
2' 6"	7' 0"	D-1	DF-1		1	19 1/4" x 30 1/2"		D-1	2' 3"	6' 10 1/2"
3' 0"	7' 0"	D-2	DF-2		2	12 3/4" x 30 1/2"		D-2	2' 9"	6' 10 1/2"
3' 6"	7' 6"	D-3	DF-3		2	15 5/8" x 36 1/2"		D-3	3' 3"	7' 4 1/2"
4' 0"	8' 0"	D-4	DF-4		2	18 5/8" x 42 1/2"		D-4	3' 9"	7' 10 1/2"
5' 0"	10' 0"	D-5	DF-5		6	16 1/4" x 30 3/4"		D-5	4' 9"	9' 10 1/2"
5' 0"	7' 0"	D-21	DF-21	2392	2	19 1/4" x 30 1/2"	2035	D-21	4' 9"	6' 10 1/2"
6' 0"	7' 0"	D-22	DF-22	2392	4	12 3/4" x 30 1/2"	2035	D-22	5' 9"	6' 10 1/2"
7' 0"	7' 6"	D-23	DF-23	2393	4	15 5/8" x 36 1/2"	2036	D-23	6' 9"	7' 4 1/2"
8' 0"	8' 0"	D-24	DF-24	2394	4	18 5/8" x 42 1/2"	2037	D-24	7' 9"	7' 10 1/2"
10' 0"	10' 0"	D-25	DF-25	2395	12	16 1/4" x 30 3/4"	2038	D-25	9' 9"	9' 10 1/2"







# AIRPLANE HANGAR DOORS

These doors are built by skilled workmen to satisfy the exacting requirements of the airplane industry. Made in two types, Straight Slide Type and Around-the-Corner Type.

## Sizes of Openings

Standard opening heights range from 12 to 30 ft. Larger doors of the same design can be furnished when required.

Width of a door unit is approximately 10 ft. Hinged end units for use with around-the-corner doors, are approximately 4 or 5 ft. as required. It is desirable to make the total width of opening some multiple of 10 ft. (40, 50, etc.)

## Construction

Doors are made of steel tubing (shown in detail) or structural steel channel as specified. All joints between frame members are solidly welded and the exposed part of the weld ground flush.

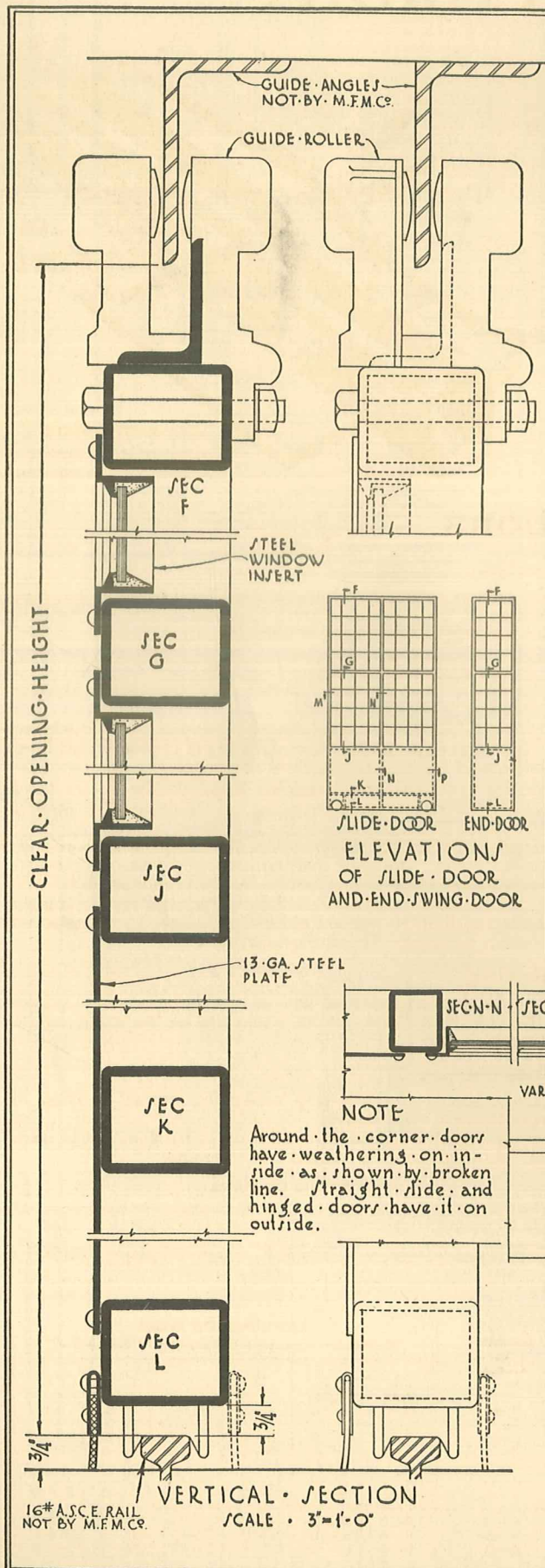
Pilot doors are provided where required. They are made of  $1\frac{1}{2} \times 2\frac{5}{8}$ -in. steel tubing and are equipped with cylinder locks.

Glazing panels are glazed inside with putty. Glass is held by steel wire glazing clips.

## Hardware

Weight of door is carried on two bottom rollers running on 16-lb. A.S.C.E. rails. Doors are guided at top by two double rollers bearing on a structural steel angle. Bottom rollers have Timken bearings and Alemite fittings for lubrication. A ball thrust bearing is used to pivot rollers for around-the-corner doors.

Slide doors are equipped with a wheel lock for locking door at any desired position. Cremone bolts are furnished for locking hinged end doors. Bumpers are furnished at ends of tracks. Travel of doors is limited by stops at top of door.



CONSTRUCTION	CLEAR-OPENING HEIGHT	CENTER TO-CENTER OF-TRACK
$2\frac{1}{2} \times 2\frac{1}{2}$ -TUBE	12'-0" TO 18'-0"	5 1/4"
3"-CHANNEL	12'-0" TO 18'-0"	6"
$3 \times 2\frac{1}{2}$ -TUBE	18'-6" TO 22'-0"	6"
4"-CHANNEL	18'-6" TO 22'-0"	7"
$4 \times 2\frac{1}{2}$ -TUBE	22'-6" TO 30'-0"	7"
5"-CHANNEL	22'-6" TO 30'-0"	8"



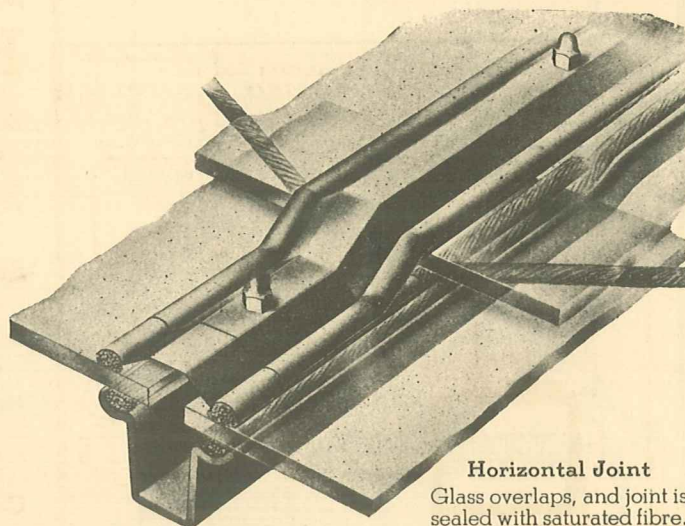
# ROLLED STEEL SKYLIGHT

Lupton Rolled Steel Skylight is especially adapted to conditions of unusual severity such as vibration, wide range of temperatures, and inaccessibility for painting.

Its patented construction eliminates breakage of glass due to expansion and contraction, and to vibration. Leakage, due to drying of putty, rapid deterioration by corrosion and collection of dust by condensation gutters are all eliminated by the Lupton Skylight.

The glass is supported between flexible strands of specially saturated fibre. This permits free expansion and contraction, without leakage, since no putty is used.

Erection of Lupton Skylight involves no cutting and fitting. All members are cut to exact size, the bars and caps are offset at the factory, and all parts are shipped ready for assembling. Erection can be done by ordinary mechanics.



## Specifications

### Work Included

1. Furnish and install where shown on drawings Lupton Rolled Steel Skylight manufactured by Michael Flynn Manufacturing Company, Philadelphia, Pa.

### Materials

2. Skylight Bar shall be a specially rolled solid, one-piece, U-shaped steel section.

3. The cap shall be specially formed of 16 oz. cold rolled copper. Studs shall be of malleable iron passing through the cap to receive brass dome nuts.

4. Curb Aprons of 16 oz. cold rolled copper shall be furnished.

Note:—Caps or curb aprons or both will be furnished in 24 gauge galvanized steel at a corresponding price when specified.

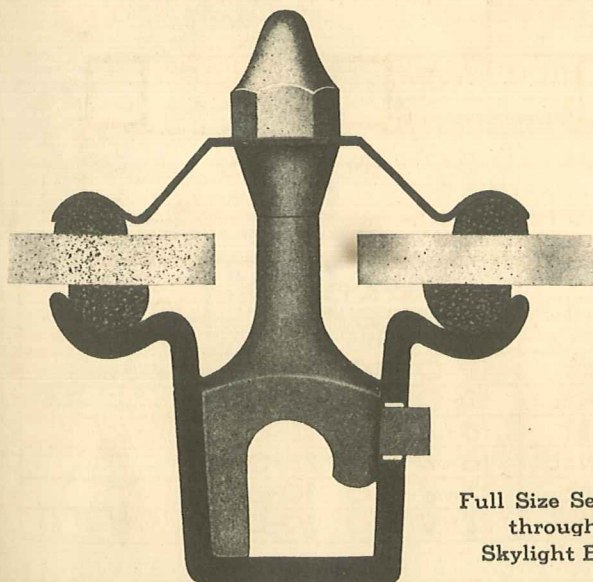
5. Clips, anchors, bolts and screws for attaching the skylight to the building construction shall be furnished as required.

Note:—(a) Anchors are not set in the masonry by the skylight contractor.

(b) Structural steel is not furnished by the skylight manufacturer.

### Construction

6. Skylight Bars and Caps shall be cut to the proper lengths ready for assembly in the field.



### Erection (See page 3)

7. Lupton Rolled Steel Skylight shall be erected in prepared openings by the skylight contractor (unless otherwise specified) in accordance with the standard details for this product.

Note:—(a) Include in the masonry specification that openings for skylights be prepared according to the standard details for Lupton Rolled Steel Skylight. Anchor clips must be imbedded in the masonry as shown in details.

(b) Include in the structural steel specification that all punching for clips, etc., required for the installation of Lupton Rolled Steel Skylight must be done by the Steel contractor.

8. The glass shall be supported longitudinally on saturated cords of specially treated fibre resting in the flanges of the skylight bars.

Where two sheets of glass overlap, they shall be separated by saturated cords. The caps shall be separated from the glass by saturated cord and held in place by the studs and cap nuts.

9. Curbs, hips and ridges shall be calked with roofing cement and flashing shall be applied at hips and ridges as indicated on the details for Lupton Rolled Steel Skylight.

### Painting

10. All skylight bars shall receive one coat of red lead primer on the outside and one coat of asphaltum on the inside before shipment.

### Glass (See page 3)

Note:—Specify the following under the proper heading in specifications of other trades.

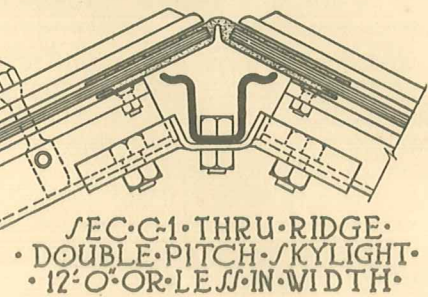
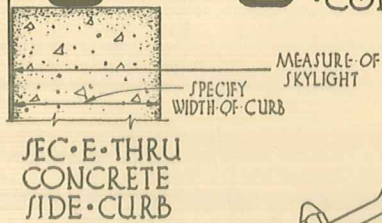
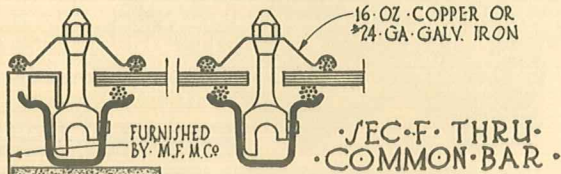
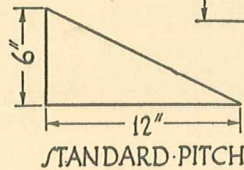
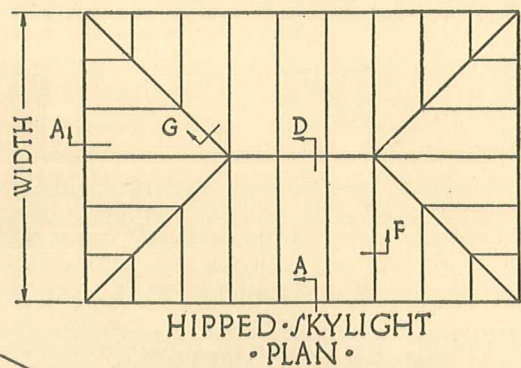
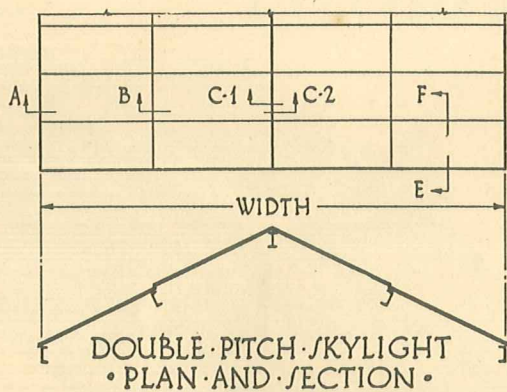
(a)  $\frac{1}{4}$  in. thick ribbed wire glass or  $\frac{1}{4}$  in. thick rough wire glass. No single sheet to exceed 6 ft. in length.

#### SPACING OF BARS

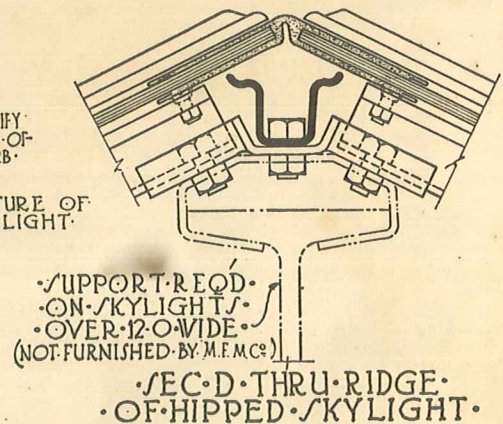
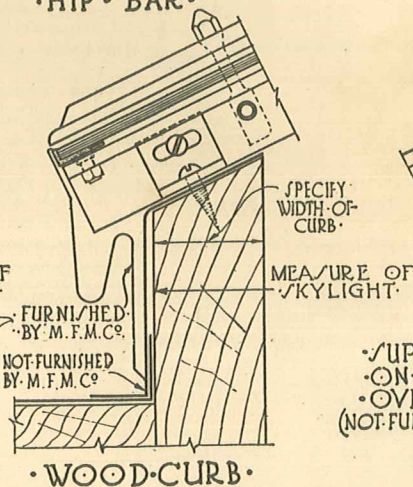
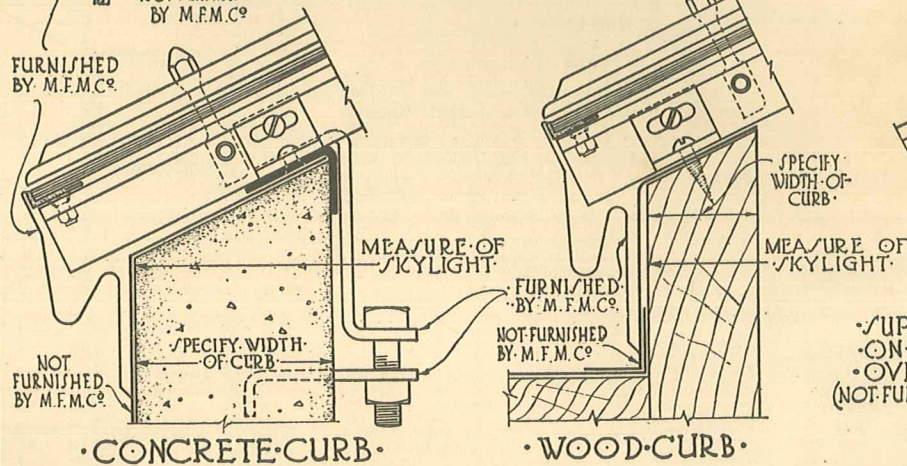
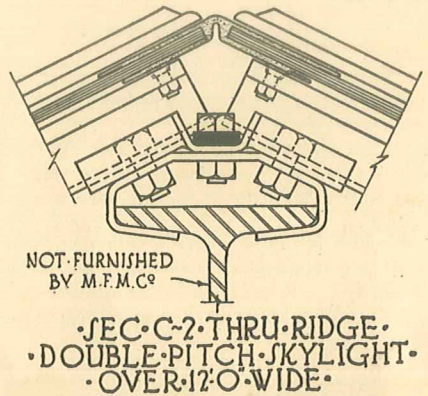
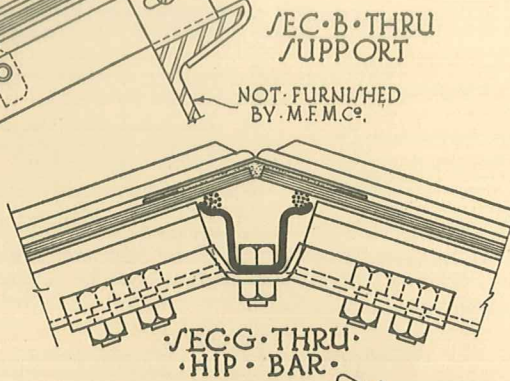
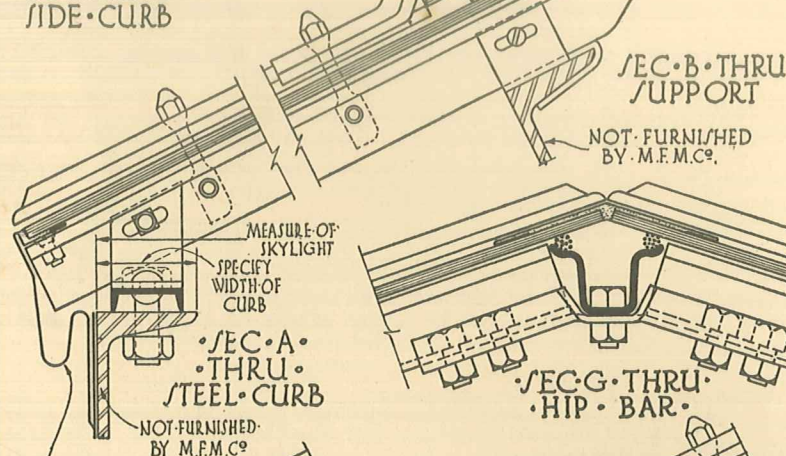
Width of Glass	20"	21"	22"	23"	24"
C. to C. of Bars	20 $\frac{3}{4}$ "	21 $\frac{3}{4}$ "	22 $\frac{3}{4}$ "	23 $\frac{3}{4}$ "	24 $\frac{3}{4}$ "

Length of Glass ft. in.	LENGTHS OF BARS Maximum unsupported length of bar is 8'-0"					
	1 light, ft. in.	2 lights, ft. in.	3 lights, ft. in.	4 lights, ft. in.	5 lights, ft. in.	6 lights, ft. in.
3-0	3-0	5-9	8-6	11-3	14-0	16-9
3-6	3-6	6-9	10-0	13-3	16-6	19-9
4-0	4-0	7-9	11-6	15-3	19-0	22-9
4-6	4-6	8-9	13-0	17-3	21-6	25-9
5-0	5-0	9-9	14-6	19-3	24-0	28-9
5-6	5-6	10-9	16-0	21-3	26-6	31-9
6-0	6-0	11-9	17-6	23-3	29-0	34-9





SCALE FOR DETAILS 3"=1'-0"



MICHAEL FLYNN  
MANUFACTURING CO  
LUPTON  
WINDOW PRODUCTS

INSTALLATION DETAILS  
LUPTON ROLLED STEEL SKYLIGHT

PLATE NO  
1001  
APRIL 1936







**LUPTON Steel Window Products**  
**to meet every requirement**

**Residential**

- LUPTON RESIDENCE CASEMENTS. Low cost standard weight casement windows in sizes to meet every requirement; with or without all-metal screens.
- LUPTON MASTER CASEMENTS. A new and improved line of medium weight steel casement windows for residential buildings with or without all-metal screens.
- CASEMENT DOORS. Single or double casement doors or French windows equipped with fine hardware.
- BASEMENT, UTILITY AND GARAGE WINDOWS. Solid section steel windows for every service requirement.

**Institutional**

- LUPTON SCHOOL WINDOWS. Four types especially developed for classroom and other school requirements. Special details on request.
- HOSPITAL WINDOWS AND DOORS. A complete line of specially developed hospital windows for every part of the structure. Special information on request.

**Commercial**

- OFFICE WINDOWS. Lupton efficiency windows combine maximum light with fully controlled natural ventilation; offered in several types.
- BANK AND MONUMENTAL BUILDING WINDOWS. Extra heavy section steel windows for fine buildings.
- SPECIAL PROJECTED AND PIVOTED WINDOWS. A full line of horizontally and vertically projected and pivoted windows to meet every requirement.
- UNDERWRITERS' LABEL WINDOWS. Labeled windows for all purposes, meeting Underwriters' requirements.

**Industrial**

- PIVOTED AND PROJECTED WINDOWS. Side wall windows for industrial plants with pivoted or projected ventilators.
- LUPTON CONTINUOUS WINDOWS. For continuous side walls, saw-tooth roofs and monitors.
- LUPTON OPERATING DEVICES. Torsion, tension, and rack and pinion types for pivoted and continuous windows.
- INDUSTRIAL AND COMMERCIAL STEEL DOORS. Low cost service doors for all industrial requirements.
- ROLLED STEEL SKYLIGHTS. Especially adapted to conditions of unusual severity, such as vibration, wide range of temperatures, and inaccessibility for frequent painting.
- AIRPLANE HANGAR DOORS. Improved type meeting government standards.

**Architecturally and Structurally Correct**